Croonian Lectures
ON
POINTS CONNECTED WITH DIABETES.

Delivered at the Royal College of Physicians,

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LECTURE III.—PART II.

I HAVE now dealt with the physiological considerations which stand, it may be said, at the foundation of the pathology of diabetes. One cardinal point is that my quantitative analyses show, as I maintained before I was in a position satisfactorily to supply actual quantitative expressions, that there is only a small amount of sugar naturally existing in the blood. A second point is that, corresponding with this small amount of sugar in the blood, there is a certain amount also, something under 0·5 per 1000, present in the urine. A third point comprises the fact that if any difference exist in the amount of sugar belonging to arterial and venous blood it may be spoken of as only of an insignificant nature.

It is hardly possible to overrate the importance of the last consideration. In proportion to the ingress of sugar into the circulatory system, whether from the food or the liver, there must be removal by destruction or otherwise to obviate increasing accumulation. This follows as a necessary conclusion, and put in converse terms the proposition stands, that in proportion to the limitation in the capacity of destruction, so must be the limitation in the supply to the circulation to prevent the occurrence of accumulation. Now, experimental and other evidence shows that corresponding with the amount of sugar existing in the circulation there is elimination with the urine, and therefore whatever accumulation occurs becomes revealed by the condition of the urine. Without a marked capacity for destruction, and in the absence of a marked amount of sugar in the urine, the conclusion is inevitable that the entrance of sugar into the circulation cannot ensue to any marked extent.

Under the presumption that a negative behaviour with the ordinary mode of testing is indicative of an absence of sugar from the urine, Bernard formerly asserted that the limit to the capacity of destruction in the system could be expressed. If, for instance, half a gramme of grape sugar be injected into the jugular vein of a rabbit, there is no reaction given by the urine. If one gramme, on the other hand, be employed, evidence is perceptible of the presence of sugar. Upon these data, about one gramme was assigned as the limit to the quantity of sugar that could be destroyed in the system of a good-sized rabbit. The fallacious character of the groundwork for such a conclusion is now obvious from what has been said about the actual condition of healthy urine, but before our information was as definite as it may be considered to stand now, I pointed out that the observation of Bernard need not necessarily receive the interpretation that was given to it, for it must be remembered that when sugar is introduced into the circulation it will be distributed throughout the system, and by virtue of its diffusibility escape from the bloodvessels into the tissues, a portion only at the time finding its way to the kidney to appear in the urine. When introduced beyond a certain limit a sufficient amount reaches the urine to be easily recognisable, but below the limit the urine remains insufficiently charged to give a distinct reaction under ordinary testing. Such I consider is the true interpretation, and that no evidence of destruction having occurred is afforded.

In a former part of these lectures, when referring to the presence of sugar in healthy urine, I said that I should again have occasion to touch upon this point at a later period. The fact that healthy urine contains a minute amount of sugar is one of great significance. It shows that even with the small quantity of this principle naturally existing in the blood an escape occurs with the urine. Not only this, but all other evidence is to the effect that according to the condition of the blood in relation to sugar so is that of the urine. The urine, in fact, in this respect, partakes of the character, and thus furnishes an indication, of the state of the blood. No matter from what source the sugar reaches the general circulation, it is conveyed in part to the kidney, and, in proportion to its amount, escapes with the urine. As I have before stated, it is now contended, under the glycogenic doctrine, that destruction corresponding with ingress occurs in the systemic capillaries. This view is inconsistent with the exigencies of the case. If destruction occurred in the lungs, the course of events would harmonise with the requirements, as the seat of destruction would be situated between the liver—or the point of ingress—and the kidney, and the flow to the kidney would be obviated in proportion to the destruction. With destruction, on the other hand, in the systemic capillaries, whatever amount of sugar passes with the blood to this part of the circulatory system must also be conveyed in like proportion to the kidney for elimination with the urine to occur. The position would be, that sugar on its way to the seat of destruction would be in part diverted to the kidney, and thence give rise to escape from the system.

Upon the strength of his quantitative determinations latlerly conducted, Bernard speaks of a tolerating capacity of the blood for sugar which prevents its passing off with the urine. He has given to this tolerating capacity a definite or sharp line of limitation; his statement being that if the blood of the dog contain 2·40 per 1000, sugar does not appear in the urine, whereas with 2·60 per 1000 it does. The mean, or 2·50 per 1000, he puts forward as expressing the limit of toleration in this animal.

Looked at, to begin with, from the point of view of feasibility, I think it may be said that this assertion bears upon the face of it a strong impress of improbability. That a hard line should exist between the escape and non-escape of a diffusible substance like sugar from the blood certainly seems extraordinary. But we have the fact that with the small quantity of sugar naturally present in the blood a certain amount of escape occurs with the urine. Observation also in a direct manner shows that in diabetes there may be voidance of a notable amount of sugar with a proportion in the blood considerably short of the alleged limit of toleration. Here (see accompanying table) are results illustrating the relation existing between the blood and urine of diabetics under different states as regards degree of severity of the disease. Nothing can be required more clearly to show that the character of the urine is expressive of that of the blood. This applies equally throughout, and therefore stands good for small quantities as well as large. In proportion to the ingress of sugar into the circulation, so is the escape with the urine. For the urine to present the character belonging to health there must only be the small proportion of sugar in the blood which I have represented as naturally to be found.

The table needs but little explanation. The blood examined consisted of blood removed by cupping. The particulars regarding the urine refer to the twenty-four hours' period within which the cupping was performed. The first three patients suffered from severe forms of the disease. The last case was one of a mild character, the patient throughout consuming a moderate quantity of ordinary bread, but otherwise following a restricted diet.

The results exhibited in the table I consider are extremely instructive. They show that the condition of the urine closely follows that of the blood. Even with 1·543 (figures much below those expressive of Bernard's tolerating capacity) per 1000 of sugar in the blood, as in the last example in our table, the urine is seen to have contained 31·76 per 1000, or 14·40 grains to the fluid ounce—an amount which may be spoken as of a decidedly notable nature, taken even in relation to diabetes. The reason that healthy urine does not present the character of that of diabetes arises from the amount of sugar allowed to reach the circulation being as small as it is. Did the condition which Bernard has contended for exist, the urine of all would be strongly diabetic. The facts before us lead irresistibly to this conclusion.

I strenuously maintain that instead of the liver being essentially a sugar-forming, it is a sugar-assimilating organ. Its great function in relation to sugar is to prevent this principle reaching the circulation to any material extent. I do not deny, and never did deny, that sugar in minute quantity reaches the blood. The facility with which the amyloid substance it contains is transformed into sugar renders it surprising that more is not permitted to enter; but it is one of the conditions of health that such should be the state of things existing. Under a variety of deviations from the healthy state, on the other hand, sugar in more or less

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notable quantities does reach the circulation, and, as a consequence, finds its way correspondingly into the urine.

From what has been said, it will be seen that the amount of sugar eliminated is expressive of the amount entering the circulation. Whatever proportion is conveyed to the peripheral capillaries must also be conveyed to the kidneys. Normally this proportion is so small that the urine examined in the ordinary manner does not give a decidedly saccharine behaviour. If sugar in larger amount reach the circulation, it becomes revealed by a proportionate presence in the urine, and it is just this latter state which constitutes a deviation from, instead of a representation of, the natural condition.

I have always understood the glycogenic function to mean an operation associated with the application of sugar to heat, or some other kind of force-production. The appropriation of sugar in some way or other to this purpose must constitute a large and important operation of life from the position held by the carbo-hydrate group of principles in vegetable food. The production of sugar by the liver has been regarded as complementary to the introduction of sugar with the food, and as placing the carnivorous animal in an analogous position to the herbivorous in relation to the principle in question. Such are the terms under which the glycogenic doctrine was propounded, and it is maintained that sugar is formed and discharged into the current of the blood for the purpose of being conveyed to the peripheral part of the circulatory system to undergo utilisation by application to force-production, in the same manner as has been considered to be the case with sugar supplied from without.

Now, it is just this which I object to. I have shown upon what physiological grounds my objection is based, and I have further to say that the doctrine is incompatible with the phenomena of health considered in relation to those of diabetes. For instance, let it be supposed that we have before us two persons, one in a state of health, and the other suffering from an ordinary form of diabetes, and that we supply them with the same allowance of mixed food per diem. The healthy person eliminates no material amount of sugar with his urine, whereas the diabetic voids it to the extent, it may be, of a pound (432·5 grammes), or more, per diem. On looking at the state of the blood, it is found that in the healthy person sugar is only present in minute proportion, whilst in the diabetic it exists to a notable extent. So far, I have only given a simple expression of facts, and let us see what argument is deducible from them. In the diabetic sugar reaches the general circulation, in part derived directly from the amylaceous and saccharine principles of the food, and in part, it may be said, from the action of the liver—a true glycogenic action—upon nitrogenous matter; for if lean meat alone be consumed, sugar is still found to be voided, although in greatly diminished quantity. The effect of the sugar from ingestion and the sugar from formation reaching the circulation is to lead to the production of more or less strongly saccharine urine. The saccharine condition of the urine stands in proportion to the amount of sugar allowed to reach the general circulation. Such is the condition existing in diabetes. In the healthy state, on the other hand, the urine escapes being similarly charged with sugar, and the inference is to be drawn that sugar does not similarly reach the general circulation. The phenomena alleged to occur under the glycogenic doctrine are precisely those which give rise to diabetes. If, in fact, the sugar derived from ingestion, and that presumed to be formed by the liver, entered the general circulation, we should all be in the position of the diabetic. The question is one which bears upon the destruction of an important part of our utilisable material, and the fact that this material is not eliminated with the urine in health as it is in diabetes is proof that it passes in a different direction within the system under normal conditions from that assumed by the glycogenic theory. In other words, there must be some other method of appropriation besides the passage into the blood for destruction in the peripheral capillaries. I take it, as there are grounds for doing, that the fault in diabetes essentially lies with the passage of sugar into the general circulation in opposition to what ought to occur.

COMPARATIVE STATE OF BLOOD AND URINE IN DIABETES.

	URINE.					BLOOD.
	Quantity per 24 hours.	Specific gravity.	Sugar per 1000 parts.	Sugar, grains per fl. oz.	Sugar per 24 hours.	Sugar per 1000 parts, mean of two analyses.
CASE 1.						
Jan. 5th.—Mixed diet.	232 fl. oz. (6608 cc.)	1040	109·91	50·00	11,600 grains (751·6 grammes).	5·763
CASE 2.						
Jan 8th.—Mixed diet.	228 fl. oz. (6474 cc.)	1041	94·08	42·85	9769 grains (633·0 grammes).	5·545
Jan. 28th.—Restricted diet.	120 fl. oz. (3407 cc.)	1031	61·34	27·69	3322 grains (2 5·2 grammes).	2·625
CASE 3.						
June 8th.—Mixed diet.	207 fl. oz. (5878 cc.)	1036	93·39	42·33	8762 grains (567·7 grammes).	4·970
July 20th.—Restricted diet.	87 fl. oz. (2470 cc.)	1033	45·49	20·55	1787 grains (115·8 grammes).	2·789
CASE 4.						
March 9th.—Partially restricted diet.	60 fl. oz. (1704 cc.)	1036	48·11	21·81	1308 grains (84·1 grammes).	1·848
June 28th.—Partially restricted diet.	30 fl. oz. (852 cc.)	1034	31·76	14·40	431 grains (27·9 grammes).	1·543

PARKES MEMORIAL FUND.—At a meeting recently held at Netley of the subscribers to the Parkes Memorial Fund to consider, among other matters, the replies to the circular relative to the disposal of the collected money (the replies being found in all cases to agree with the proposal adopted in April, 1877), it was resolved—1. That a prize of £100 in money and a large gold medal bearing the portrait of the late Dr. Parkes be given triennially for the best essay on a subject connected with hygiene, to be declared at the commencement of each triennial period; the prize to be open to the medical officers of the Army, Navy, the Indian Services of executive rank on full pay (with the exception of the officers of the Army Medical School during their term of office). 2. That the subject for the first competition for the above-named prize be as follows:—"On the Effects of Hygienic Measures in Arresting the Spread of Cholera." 3. That the essays be sent in to the Committee of the Parkes Memorial Fund, care of the Director-General, Army Medical Department, 6, Whitehall-yard, London, S.W., on or before the 31st December, 1880. Each essay to have a motto, and to be accompanied with a sealed envelope bearing the same motto, and containing the name of the competitor. 4. That a bronze medal (also bearing the portrait of the late Dr. Parkes) be given at the close of each session of the Army Medical School to the best answerer at an examination in hygiene.

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Clinical Lecture
ON
DISSEMINATED FOLLICULAR LUPUS
(SIMULATING ACNE).

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(Concluded from page 38.)

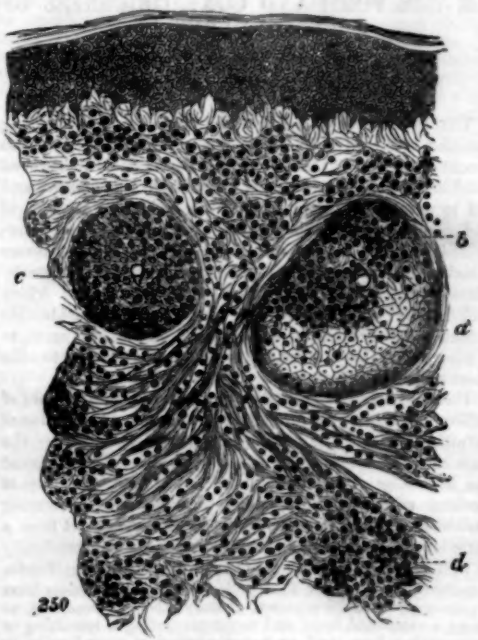
THE three cases I have related agree completely in their main features. The rash attacked the face alone, and especially the chin, the nose, the cheeks, particularly the part under the eye, and the forehead. No pain was present, and slight itching only attended the eruption. The eruption in each case was emphatically distinguished by three things:—(*a*) The character of the substance, and especially the base, of the separate spots, which differed from every form of acne in lacking the characters of inflammatory infiltration, and exhibiting the colour, aspect, and behaviour of lupus tissue, and as regards the latter point especially the scarring left behind by the disappearance of the smallest nodules; (*b*) the singularly indolent, non-inflammatory course of the eruption, and its changeless state, each spot remaining, when once developed, without appreciable change for a long time, except in some instances in the degree of surrounding vascularity; (*c*) the complete insusceptibility to the usual plans of treating acne, and the disappearance of the disease only by the use of appropriate caustics. It is well known that in severe and obstinate cases of acne, especially the *indurate* form, it is sometimes necessary to touch the spots with acid, because of the slow progress they make towards disappearance, but under these circumstances, the slight application of acid nitrate of mercury suffices as a rule to speedily set up resolutive changes in the infiltrations even though they may be of large size. In this respect the follicular or acneiform lupus I am describing offers a decided contrast, for it is necessary to actually destroy the whole growth by caustic, small though the mass may be, in order to get rid of the disease, and if the morbid tissue be not so destroyed the little nodules easily regrow. Such is my experience in the three cases which I have just noted.

I think these three features of the eruption sufficiently indicate its peculiarity. I may add here that, as regards the central point of some of the spots *appearing* to be pustular, I believe that in these an aspect of a central suppurative speck was given rather by accumulation of epithelium than true pus; but still, in the earliest stages of the spots, here and there a comedo was present. And it is also important to notice that in one case (the last recorded) a few independent comedones coexisted.

I dare say I shall be told that only a professed dermatologist could be expected to recognise the peculiarities of this follicular or acneiform lupus; but I question much whether, when once the existence and the special features of this form of disease have been pointed out, any ordinarily careful observer can fail to do so in future. Certainly, from a therapeutical point of view, it is absolutely necessary that it should be diagnosed, for it is simply a waste of time to treat it as an ordinary acne, save that the spots may be rendered rather less congestive if so, and delay in adopting the proper treatment only leads to great discomfort, and to undue disfigurement of the patient's face.

The reason for the deposit of the lupoid tissue about the upper part of the follicles of the skin is with difficulty given. In my three cases the disease attacked subjects predisposed to acne, and probably the constitutional condition of the patients, which was one of phthisical tendency, was just that in which lupus is wont to occur. The combination of the two conditions — viz., predisposition to phthisis, and acne—may best explain the limitation of the disease to the follicles. I throw this explanation out suggestively and tentatively.

Minute anatomy.—With the patient's consent, I removed several of the small nodules from the face, and submitted them to microscopical examination. The general characters of the changes in the skin are portrayed in the accompanying illustration, which represents a section of one of the nodules, magnified 250 diameters. The horny layer of the skin is somewhat thinner than usual, the rete Malpighii has undergone little change in its upper strata of cells, but the deeper parts are atrophied. The papillæ are not distinctly, if at all, marked; in fact, are obliterated in parts by a new cell-growth, similar to that of ordinary lupus, which takes the place of the normal structures. The other changes found in the corium consist in the free invasion of the textures by this same cell-growth, which is found in more or less abundance throughout. The vessels are distinct. So free is the cell infiltration that it is difficult to speak with certainty as to its seat of origination. In some parts, the



sebaceous glands *seem* most affected, as at *c*, and the disease would appear to be *adenomatous*; but in other parts they are scarcely if at all involved, or only partially, as at *a* and *b*. At *a* are seen the healthy epithelial structures of the gland, and at *b* the cell infiltration. In other parts the corium itself (*d*) is so fully compromised that it seems to be literally stuffed or replaced by the cell-growth. My own belief is that the disease does not begin as an adenoma, but that gland, corium, and rete are alike involved in one and the same morbid process—the formation of lupoid tissue in their midst—which leads to destruction and atrophy of the normal textures, as is clearly shown in the papillary layer of the cutis in the drawing. The microscopic examination of the morbid tissue of the nodules in the disease fully confirms the inference derived from clinical observation as to the nature of the disease in question.

Diagnosis.—The differential diagnosis of the eruption has, as a matter of fact, been set forth in the immediately preceding remarks, and I need only observe here that attention is at once arrested in cases of this acneiform lupus by the lupoid aspect of the tissue forming the bases especially of these spots, and the indolent, changeless course of the disease. The eruption may be confounded with a particular modification of acne rosacea, or, rather, the latter might be supposed by one who has never seen it to be the clinical condition I now describe. The aspect of acne rosacea to which I refer is that in which inflammatory papules or infiltrations into the papillary layer of the skin are mixed up with acne spots and more or less congestion of the face tissues, but the soft, dull red, *inflammatory* character of the spots in acne rosacea are quite distinct from the features of the follicular lupus.

Treatment.—When once the diagnosis is correctly made cod-liver oil and iron should be given internally, and each

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separate nodule should be destroyed with caustic. The two best forms of caustic are the fuming acid nitrate of mercury (not the pharmacopœial preparation), and a solution of equal parts of potassa fusa and water. The advantage of the latter caustic is that the pain and swelling, if any, which follow its application are only transient, and may be checked at once by the use of cold water bathing. It may be necessary to touch even small spots more than once; but the caustic should be used cautiously, so as not to produce too much scarring. Its use is a matter of knack in these cases.

REMARKS

ON THE FORM AND CONTAGIOUSNESS OF YELLOW FEVER.

BY ROBERT LAWSON,
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THE occurrence of a few cases of yellow fever among families of standing in Jamaica some months ago, and the recent discussion at the Clinical Society on one which proved fatal in London, have directed attention to this disease, and led to several communications upon it both in the general and medical press, which set forth some of the views entertained as to its nature and its relation to the other fevers which are to be met with in the localities where it prevails. Having seen yellow fever, both on the West Coast of Africa and in the West Indies, and having given considerable attention to the features which characterise it, and serve to distinguish it from other kinds of fever, I venture to offer some remarks on these much-disputed questions.

There is nothing more striking in the modern literature of yellow fever than the little advance it displays on the line of investigation and the mode of treatment followed by the numerous writers who recorded their experience and views at the beginning of the century. Now, as then, one body of medical practitioners regard yellow fever as presenting various forms, as arising from local causes and not from a personal contagion, and as frequently appearing sporadically as well as from time to time in the form of a severe epidemic. Another body consider that yellow fever always arises from a poison given off by a person already labouring under it, as being a continued fever and never presenting a remitting or intermitting form, and as never appearing sporadically, or arising without communication either directly or mediately with a previous case; while they relegate the sporadic cases every West Indian, and many an American, practitioner are familiar with, and the frequent occurrence of which cannot be ignored, to what has been variously designated "remittent" or "malarious yellow fever"—a form said to present a very close resemblance to true yellow fever, including the yellowness of the surface and black vomit, but which may be distinguished from yellow fever by the non-occurrence of albumen in the urine. It is worthy of observation that the great majority of the members of the profession who have resided some years in the tropics, and had constant experience of yellow fever, entertain the first opinion, and it is only among those who have met the disease occasionally, or who have never been brought into contact with it, that the second is generally received. It is not creditable to the medical profession that this question remains so undefined; it might have been expected that long ere this there would have been strenuous endeavours to narrow the subject in dispute by closer investigation of the characters of the disease, and more rigid examination of the evidence employed and of the inferences drawn from it. Attempts in this direction have not been altogether wanting, yet hitherto they have received wonderfully little attention.

The first thing to be done in attempting to simplify this question is, clearly, to give such a description of yellow fever as may enable it to be distinguished with certainty from allied forms of disease, and this should embrace characters which are obvious to the senses, but which neither involve any theory nor inference, nor any point in dispute between the contending parties. The following is submitted as complying with these conditions:—

Yellow fever is a febrile disease, usually terminating in convalescence or death from the fourth to the seventh day, but either may occur as early as the second day, or not before the tenth or twelfth, or even later. There is generally yellowness of the surface, commencing at various periods in different individuals or epidemics. On the evening of the third day, or morning of the fourth, the urine usually contains traces of albumen, and on the latter a considerable sediment appears in it, almost wholly consisting of the scaly epithelium from the bladder; this is succeeded by an equally copious one on the morning of the fifth day, which consists almost exclusively of granular tube-casts from the kidneys, with scarce a trace of epithelium from the bladder. By this time the albumen has usually become considerable, the chlorides have been greatly reduced, and the urine as a whole is usually scanty, and may even go on to complete suppression; if there be much yellowness the urine may contain a variable quantity of the colouring matter of the bile. The alvine discharges are devoid of the natural feculent appearance, especially from the third day onwards until the disease gives way. As the alvine and urinary secretions assume these peculiarities, there is a great tendency to black vomit, or discharges of similar matter from the bowels, or to the so-called hæmorrhages from the various mucous surfaces, or even in some cases from the skin, and after death such may often be found in the stomach or intestines when not manifested during life. Such are the distinctive features of a normal case of yellow fever, but in some the occurrence of the urinary symptoms may take place earlier than here mentioned, and in others they seem to be delayed for a day or two; but whenever watched from day to day and properly examined, it is found that the changes in the urine not only embrace the presence of albumen, but indicate desquamation of the bladder and kidneys, as regular features of the disease. It is important to bear this in mind, for in some varieties of intermittent albumen has been found in the urine, but in such cases it occurred during the cold stage only, and went off as the fever came on, and was not preceded or accompanied by the desquamative process present in yellow fever, but which is not met with in either the pure intermittent or remittent.

The question may now be asked, Do fevers presenting the symptoms just detailed always occur in the continued form, as the contagionists assert, or do they frequently show a remittent, and, occasionally, an intermittent, form, as many of the older authors described? To this I reply that I have met them in all three forms, and that the train of urinary symptoms and other characteristic features of yellow fever were as fairly developed in the periodic as in the continued form of the disease; the definition of yellow fever which represents it as being always of the continued form, therefore, is altogether erroneous.

Next, as to the sporadic cases—are they to be referred to the so-called malarious yellow fever, or do they differ from the true yellow fever? Here it is to be observed that ordinary remittents and intermittents, as well as continued forms of fever, may present yellowness during their course, and at certain times this complication is not uncommon, but black vomit is not met with in such cases, nor that particular combination of urinary symptoms already described; when the latter do occur black vomit is always impending, and frequently the first indications of it are met with in the form of brown patches, resembling small pinches of snuff or coffee, floating in a clear mucus, though it may not be developed further, and the case is really one of yellow fever. Sporadic cases of fever presenting all these symptoms are common, but I have never seen or heard of one in which black vomit, or some of the analogous discharges, made its appearance, in which the urinary symptoms were not found when the requisite examination for them was made. It is no uncommon thing to see patients labouring under pure remittent fever, and yellow fever, it may be in the remittent form, in the same ward at the same time, each disease pursuing its own course, the former showing no trace of implication of the urinary organs or black vomit, the latter displaying both in the most unequivocal manner. The only conclusion these facts will support is that the sporadic cases are true yellow fever, as most of those whose experience of them has been extended have long considered, and that the so-called malarious yellow fever has no existence.

Yellow fever, then, occurring both in the continued and periodic forms, and both sporadically and as an epidemic, is it simply an aggravated description of the ordinary malarial fevers, as many of the older writers believed, or are its chief characters imposed on it by something else than that causing

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the common continued or periodic fevers? The evidence appears altogether in favour of the latter view. The peculiarity distinguishing yellow fever from the others is the regular and early implication of the liver and kidneys, not simply functionally, but by an active exudation into their parenchyma, which in the former leads to interruption of the free passage of the bile through the smaller branches of the bile-ducts, and hence to its absorption into the blood and its diffusion through the system, and in the latter to the albuminous urine and desquamation of the tubes, and in many cases to the complete suppression of urine. The muscular substance of the heart is also the seat of active exudation, and the fibres appear pale, their transverse striæ very indistinct, and they display a remarkable tendency to separate longitudinally into their component fibrillæ, while the voluntary muscles in the same cases present no trace of this alteration. The heart has been found affected in a somewhat similar manner in the fevers of this country, but apparently less frequently, and in these the voluntary muscles present the same changes. In the recent case in London the liver and kidneys were found as here described; but the heart, though its altered condition was noticed, does not seem to have been examined microscopically. There must be something which induces these complications in yellow fever which is not necessary for the production of the ordinary forms of fever, and therefore to this extent we are justified in concluding that the causes of the former differ from those of the latter, and that yellow fever is not merely an aggravated form of the ordinary fevers of warm climates.

Is this poison (if it may be so called) of yellow fever the product of locality, or a contagion given off exclusively by persons labouring under it? This question can be decided only by a mode of investigation different from what many writers seem to imagine, and much of the uncertainty in which it has hitherto been involved has arisen from individuals drawing conclusions from evidence insufficient to determine it, and too often, unknown to themselves, making up for deficiency of proof by interpreting the facts according to their previous bias. It must be remembered that we have no knowledge of the existence or operation of the causes of yellow fever at any place unless we see man, or animals subject to the disease, attacked by it; in other words, the living body (of susceptible persons or animals) is the only reagent we have for it. If, then, we see yellow fever arise anywhere, all that teaches is that the cause of the disease is in operation in that locality at the time; but as to whether that be a contagion given off by a person sick with it, or something connected with the locality, and quite independent of persons affected with the disease in it, it can establish nothing. It may be that before the fever commenced a person labouring under it came from another locality, and even that the first attacks among the residents, who had not been away from the spot for a considerable period, were in persons who had had communication with the imported case. This circumstance would raise the suspicion that the exposure to the emanations from that case might have had something to do with the appearance of those which followed, and, were it a frequent occurrence, would no doubt give considerable weight to the view; but, on the other hand, there is abundant evidence that sporadic cases, and even epidemics, may arise without being preceded by imported cases; and, again, that many large importations of cases have taken place without any extension of the disease, though many persons who came into contact with the sick, and for prolonged periods, were susceptible of it. Contagionists maintain the first instance proves their position; and, when the second and third are put before them, they say of the former, either that the contagion must have been introduced in some unknown way, or that the cases, however closely they resembled yellow fever, were really malarious yellow fever, which was mistaken by the observer for the specific disease; the third instance is met with the remark that it is negative evidence, and of no weight as compared with the positive evidence in the first. Non-contagionists, on the other hand, hold that the second instance affords strong support as to local causes being the excitants of the disease; that the third shows unequivocally that the disease is not contagious; and they believe that in the first, as in the other instances, the true explanation is that local causes became developed, coincident with the arrival of, but unconnected with, the imported cases, to which the subsequent disease was due.

To establish the contagiousness of yellow fever, then, it it is necessary to exclude completely the operation of local causes. How is this to be effected? The occurrence of cases, as has been shown, indicates nothing more than the fact that the causes of the disease are active at the spot at the time, and, by itself, does not enable us to exclude either contagion, or local causes quite independent of persons labouring under it. Cases from the locality in question may be carried into a new one, and another series may arise there after their arrival, as in the previous instance; but they establish nothing more, the circumstances do not yet enable us to exclude the influence of locality, neither can any repetition of the experiment, for the occurrence of fresh cases in the new locality only shows the causes of the disease are active there, but does not enable us to decide whether they depend on the sick introduced or are quite independent of them. The only way by which the influence of locality can be excluded is when a move has been made to a spot where, though sick be introduced, no fresh disease arises among persons who have not been away from it for a considerable period, and such spots are often found within a few hundred yards of others where the disease in a fatal form is rife, under which circumstances there is no evidence of local causes being in operation, and in their absence the presence of the sick is unable to induce it. This, in fact, is but a repetition of the circumstances indicated in the third instance in the preceding paragraph, save that there the importation may have been into a place which, though healthy at the moment, may have suffered from yellow fever at other times, while here the transfer of sick is supposed to be merely from one spot to another within a more extended locality when the disease was active. Examples of the latter, however, are sufficiently numerous to leave no doubt as to their bearing. A very striking one may be given which illustrates both phases of the question.

In 1865 yellow fever prevailed at Sierra Leone, and the *Isis*, receiving ship, which had been there some years, had several cases on board, of which the last two were attacked on the 16th and 18th December respectively, and both died on the 21st. A few days after H.M.S. *Bristol*, with a crew of 535, arrived from England, and instead of running up to Freetown as usual, anchored in the open sea five miles from that place. It having been considered that the position of the *Isis* was unhealthy, a party of four officers and 112 men were sent from the *Bristol* on the 28th and 29th December, to remove her to a healthier one. The party returned to the *Bristol* each night without going on shore. Fever commenced among the men of this party on 31st December, and up to Jan. 6th thirty-seven were attacked, and there was another on Jan. 12th, the last which occurred. Of these twenty-one died on board from Jan. 3rd to Jan. 10th, and two subsequently at Ascension. Twenty-nine cases were classed as yellow fever and nine as remittent. In the former the urine was found highly albuminous in every case in which it was examined, loaded with tube-casts, epithelium, and blood-cells, and black vomit was frequent, which conditions, as well as the rapid course of the disease and its enormous mortality, stamp it as malignant yellow fever. Two officers and one man of the *Bristol*, not of the working party, also went on board the *Isis*, and subsequently had fever. All the attacks occurred in the *Bristol*, but no one suffered who had not been on board the *Isis*. The best measures the circumstances permitted were taken to limit the exposure of the healthy among the *Bristol's* crew to the emanations from the sick, but five medical officers, and twenty-four men employed as nurses, were in constant and close communication with them, and fully exposed to whatever chances of contracting the disease these circumstances might involve.[1]

On analysing this case these facts come out distinctly—(1) that the *Isis* had become a focus of the disease, whether from a contagion left by the preceding sick, or from something in the vessel herself unconnected with these, the evidence from her does not enable us to decide; (2) no case of yellow fever having occurred among the crew of the *Bristol* up to this time, nor any subsequently, except among those exposed in the *Isis*, there was no evidence of local causes being in operation in the *Bristol*; (3) having thus eliminated the influence of local causes, the question of communication from sick to healthy persons can be dealt with by itself, and it is found to have been inoperative. There are many cases on record which permit of the elimination of the local causes, as in that of the *Bristol*, and their teaching is uniformly to the same effect. Had the people from the *Bristol*

[1] Statistical Report on the Health of the Navy for 1866, p. 222, et seq.

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remained in the *Isis*, or had the *Bristol* had an efficient source of the disease within herself, such as existed in the *Isis*, and cases had arisen among her crew who had not been on board that ship, how deceptive the evidence would have been, and how perfectly unsuited to bring out the real bearings of the case. It is mainly on instances of the latter description, which do not permit of the exclusion of local causes, that those who advocate contagion in yellow fever base their reasoning, and, from what has been said above, it is obvious conclusions resting on such grounds must be illusory.

The above details may be summed up as follows:—

1. Yellow fever is not a disease always presenting the continued form, but it is met with frequently as a remittent, and even as an open intermittent.

2. The sporadic cases presenting yellowness of surface and black vomit are also found to have the train of urinary symptoms characterising yellow fever, and are consequently identical with those met with during an epidemic.

3. In very many instances where persons in the vicinity of yellow fever cases are attacked with the disease, the facts do not admit of the exclusion of local causes, and such instances therefore cannot enable us to decide whether these causes or personal contagion have originated the disease; but from time to time other instances occur in which the exclusion of local causes can be assured, and in these, however extensive the exposure of susceptible individuals to the emanations from the sick may have been, the uniform result is that no communication of the disease has taken place.

ILLUSTRATIONS OF ANTISEPTIC TREATMENT IN MINOR SURGERY.

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(Concluded from p. 41.)

THE next cases are examples of drainage by catgut introduced by Mr. Chiene, of Edinburgh—a subject of great interest to all surgeons, and of infinite importance to those practising antiseptic surgery.

On January 3rd, 1877, I examined E. McL——, aged twenty-three, who had been admitted into the Aberdeen Infirmary in December, 1876, complaining of severe pain in his chest. A swelling, measuring about five inches in length by three in breadth, was found to the left of the sternum above the nipple. Fluctuation was indistinct, but on introducing an aseptic exploratory needle the presence of pus was demonstrated. An incision of sufficient size to admit a forefinger was made under spray, and about two ounces of pus was evacuated. On examination, the ribs were found to be sound. A probe, armed with ten threads of medium catgut, was passed through the opening, and brought out at the further extremity of the abscess cavity, a small slit being made to allow of its emergence. The probe was then detached, and the ends of the drain were left hanging out at either end. Antiseptic dressings were applied in the usual manner, an elastic bandage being used to retain them in position. Next day the external dressing was removed, but the loose pieces of gauze constituting the deep dressing were left in position, as the discharge had not penetrated beyond them. The patient's temperature remaining normal, and the pain having disappeared, the case was not again dressed until January 11th, when both superficial and deep dressings were removed. The deep dressing was found to be soaked with bloody and puriform discharge, but was quite inodorous; the inner layers of the external dressing were stained with discharge. The ends of the catgut drain which had been left protruding were found lying loose on the face of the deep dressing, and the points through which the drain had been inserted were soundly healed and the walls of the abscess cavity firmly consolidated.

On December 11th, 1876, my clinical clerk, Mr. Henry, amputated the second toe of a young woman's right foot for deformity. The operation, at which I assisted, was performed under spray; one vessel was secured by catgut; and a catgut drain, consisting of six threads, was inserted, the ends being left hanging out both above and below. The edges were approximated, catgut sutures were inserted, and antiseptic dressings applied. On the second day the superficial dressing was changed, and on the eighth day the wound was uncovered for the first time since its infliction, when it was found to be entirely healed, except at a minute point where the end of the drain had been brought out upon the dorsal aspect of the foot. The ends of the drain were found lying loose upon the dressing: the catgut stitches had likewise become detached; there had only been a trifling amount of discharge; and there were no signs of inflammation, union having evidently taken place by the first intention.

Alexander W——, aged seventeen, was admitted to Jacob's ward for the purpose of having a supernumerary toe removed. On June, 18th, 1878, my clinical clerk, Mr. Rattray, performed the operation under my superintendence. The wound, which was situated on the outer side of the left foot, was about two inches in length. Three vessels were secured with catgut; the ends of the ligatures, instead of being cut off short, were retained for the purpose of drainage, and they were brought out at the posterior or lower aspect of the wound. The cut edges were accurately approximated, and kept in position by means of sutures of oily catgut and horsehair; the usual dressings were then applied. During the operation thymol was used instead of carbolic acid. The outer dressing was removed on June 20th, and a fresh one applied, but the deep dressing was left *in sitû* until the 29th. On that day the wound was uncovered for the first time since the operation, when it was found to be *completely* healed; the ends of the drain and the catgut sutures were lying on the face of the protective, the horsehair sutures were still in position, but no trace of discharge could be discovered in their track when they were removed.

This case was even more successful than the preceding one, for here union was complete and entire at *every* point—a result which surprised me greatly, for, on account of the removal of a little more skin than was called for, there was tension, not certainly in a great degree, but sufficient to make me doubt the advisability of attempting to obtain union by first intention. The result, however, showed that my fears were unfounded; and it proves, as far as a single case can, that, in cases where antiseptic treatment is employed, it is necessary to modify one's views concerning hitherto well-established axioms regarding the treatment of surgical wounds where tension is present.

The advantages of an absorbable over an inabsorbable drain, of a non-irritating over one whose presence gives rise to a certain degree of irritation, are many, and may, I think, be best appreciated by a consideration of the points wherein ordinary drainage-tubes are found objectionable. For this purpose I shall make use of the following quotations from Mr. Chiene's original paper,[1] of which he has kindly permitted me to avail myself. "Acknowledging the undoubted advantages of the drainage-tube as regards efficiency, I have long felt its disadvantages: for instance, its interference with rapid healing throughout the whole extent of the wound; the irritation it not unfrequently caused by its presence as a foreign body; the blackening of the protective, showing that irritating compounds were always present in the rubber, however pure; the tendency to regurgitation of air along the elastic tube during dressing, thereby increasing the danger of mischief passing into the depths of the wound; the necessity of dressing a case solely in order to shorten the tube; and the impossibility of being able properly to estimate the rate at which this should be done. These are self-evident evils, and their removal has for some time occupied my attention." Mr. Chiene next proceeds to relate the circumstances by which he was led to think of drainage by catgut, and adduces some most instructive and interesting cases as examples of its efficiency. After describing how it should be employed, and giving an explanation of its mode of action, he says:—"I beg to recommend as worthy of the notice of the profession the principle of drainage by utilising capillary forces through skeins of an absorbable material like catgut, if by its use the evils of the drainage-tube, already referred to, are got rid of. We may now anticipate a time when, with catgut stitches instead of silk, horsehair, or silver wire, catgut drains instead of india-rubber tubing, and chromic-acid gut fixing together the buttons instead of silver wire, it will not be necessary to uncover our wounds from first to last during

[1] Edinburgh Medical Journal, Sept., 1876, p. 225.

healing, when the deep dressing need never be shifted, and when the outer dressing will only require to be removed when soaked with discharge. The amount of discharge, in its turn, will be reduced to a minimum by the use of an absorbable animal material like catgut, instead of a non-absorbable foreign body like silk, silver wire, or india-rubber."

The extracts above given show at once the theoretical advantages of this new method of wound-drainage. I have not yet had sufficient experience of it in major operations to enable me to assert that it is of universal application, but I feel satisfied that in minor cases it is *simply invaluable*, and if the experience of others should coincide with what I have myself seen, which I firmly believe will be the case, Mr. Chiene will be justly entitled to the gratitude of both surgeons and patients, and to the credit of introducing one of the greatest improvements connected with the antiseptic management of surgical cases.

The last case to which I shall direct attention at present is brought forward not on account of its interest as a successful specimen of extreme conservative surgery obtained by the use of antiseptic measures, but in connexion with the employment of specially prepared catgut, which will be found useful for sutures in cases where a non-irritating and lasting material is desired.

H. B——, aged sixteen, presented himself at the Aberdeen Hospital on June 9th, 1877, suffering from a compound fracture of his left forefinger. The wound ran obliquely across the finger, and was about one inch and a half in length. The fracture extended through the joint, between the second and third phalanges, the point of the finger retaining its connexion to the rest of the member by a small band of skin. A portion of the articular surface of the third phalanx had become detached from the bone. This was removed under spray, the wound was thoroughly washed with carbolic water, a drain consisting of two threads of common antiseptic catgut was inserted, the parts were brought into accurate apposition and stitched with chromic-acid catgut, a small splint was adapted, and gauze dressings applied. The patient was sent home, with directions to return next day. The wound was dressed from time to time; ten days afterwards it was firmly and solidly healed, excepting at the points of emergence of the drain, where there were two pin's-head granulating points. The patient had never suffered from pain; there was no inflammatory swelling from first to last, and the discharge was hardly worthy of notice. Two of the stitches were allowed to remain until June 30th, the antiseptic dressings being continued, and on their removal they were found to be in exactly the same condition as when inserted, the portions of tissue through which they had been passed, and in which they had lain for three weeks, were *perfectly dry*, no drop of discharge surrounding them, nor following their extraction.

Since I first heard Professor Lister speak of catgut specially prepared for sutures, I have given the subject considerable attention. The first case in which I employed a small portion of catgut so prepared was one of nævus in a child, where I had to remove a portion of the lower lip. The suture, which was passed through mucous membrane, was removed on the fourth day, and, on minute examination, I found that it was unchanged in appearance. This I knew, from a considerable experience of ordinary antiseptic catgut sutures, was not what might have been expected had the material not been specially prepared, for the catgut which is in common use, though admirably suited for sutures, in very many cases becomes softened when exposed to the influence of much moisture, and, from this softening process, becomes detached at a very early period. As an example of this, I may refer to a case of excision of what was supposed to be a loose body in a knee-joint, but what proved to be, when the joint was laid open, a growth attached to, and forming part of, the synovial membrane, which was clipped off with a pair of scissors. The edges of the wound were united by stitches of ordinary catgut, and, though there was no synovitis, and no suppuration, the gut became absorbed before union had taken place, and the part healed by granulation—a result certainly sufficiently good to satisfy anyone not acquainted with the behaviour of joint wounds under antiseptic management, but which might have been still better had the sutures not been so readily absorbable.

During the last few months I have conducted a number of experiments with catgut steeped in solutions of chromic acid of varying strength, the material being kept in the solutions for a given number of hours with a view to obtain a substance which, while capable of being absorbed, might be relied on as possessing sufficient endurance, if I may so put it, to last until its use could be dispensed with; but this I have as yet failed to obtain, the weakest solution of chromic acid seeming to so tan the catgut that its solution and absorption is rendered impossible. Still chromic-acid catgut sutures, similar to those used in the foregoing case, are of great value in a very large class of cases, and may be regarded as perfectly reliable substitutes for silk or wire, as, with the single exception of absorbability, they will be found to meet all the requirements of this mode of keeping cut parts in apposition. For chromic-acid catgut possesses the advantage of a maximum degree of strength combined with a minimum of size, and it is absolutely non-irritating. I have now used it in a great variety of cases, from major amputations to minute excisions, and in no case have I had reason to regret its employment. I do not mean it to be understood that in every case it has held the parts together until union has resulted, but that it has proved lasting and non-irritating in all; for example, in a case of amputation of the thigh, where union did not take place by first intention, the sutures soon became detached from the edges of the posterior flap, but some of them were allowed to remain attached to the edges of the tissues forming the anterior flap, without occasioning the slightest degree of inflammatory irritation. The mode of preparation I have hitherto found most reliable is this: I take a few yards of thin, common, unprepared, dry catgut, and place it in a wide-mouthed phial containing glycerine and carbolic acid (one part of acid to seven of glycerine), and, after steeping for a week or longer, the catgut is transferred to a vessel containing chromic acid, acetic acid, and water (one per cent. of chromic, and twenty-five per cent. of acetic acid). At the end of seven hours the catgut is taken out and dried. During the drying process it is prevented from curling up, or getting rough and uneven, by using tension, the gut being stretched by winding it round two nails driven into a piece of wood, a foot or two distant from each other. In the course of a few hours it will be found ready for use. Catgut, thus prepared, is a brownish-black, perfectly smooth material, possessing great strength, yet not much thicker than what is sold in bottles as "fine" antiseptic catgut ligature. The mode of preparing tanned catgut may possibly be already well known; but, as I have not yet seen any description of it,[1] it occurred to me that a detailed notice of it might prove useful to those seeking for a reliable substitute for the materials commonly employed for sutures.

In the course of this paper, which I must now conclude, I may perhaps have dwelt at undue length on the lesser points connected with this wide subject, to the exclusion of the greater and more important; still I am inclined to hope that a careful consideration of the cases adduced and the phenomena observed will not be altogether lost upon those who have not yet found themselves able to believe that the antiseptic mode of Professor Lister must displace every other method yet brought forward, and that there is something more in it than careful drainage and absolute cleanliness.

Aberdeen.

ON PUERPERAL SEPTICÆMIA;

AND ITS RELATIONS, IF ANY, WITH THE POISONS OF THE SPECIFIC ZYMOTIC DISEASES—MEASLES, SCARLET FEVER, SMALL-POX, ETC.[2]

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EVERY obstetrician residing in a large town, and every consultant who has a tolerably wide area of practice, must occasionally encounter one of those appalling cases of (so-called) puerperal fever, which, after taxing all his efforts to baffle death of his victim, and all his moral courage to support his own and his patient's confidence in the means employed for recovery, oblige him, in the great majority of cases, to retire discomfited from the conflict, and disheart-

[1] Some interesting facts concerning the preparation of catgut ligatures, brought before the International Medical Congress held at Philadelphia in 1876 by Professor Lister, and the composition of the fluid he employs for the purpose, may be found in the Transactions of the Congress, p. 538.

[2] Read before the Worcestershire Medical Society.

ened and suspicious of finding success in any future case of a similar character. The very name of the disease, "puerperal fever," is so vague and unscientific as to convict those who use it of vague and indefinite ideas regarding its real nature. That a woman should be occasionally feverish in the puerperal state goes, as the French say, without telling; but to say that she has puerperal fever tells us nothing of the nature of that fever, of its etiology, pathology, mode of propagation or development. To encounter such a formidable malady with any prospect of success we ought to have the most precise ideas of its true nature; and, further, since experience tells us that, in the great majority of cases, all treatment is of no avail—such profound changes in the vital fluids having taken place as to preclude all hope that the structures can maintain their integrity,—we are thrown back upon merely preventive measures as our only means of safety, the only means whereby we can hope to satisfy the public demand for exemption from the ravages of a malady so unamenable to curative efforts.

It has been my lot to be called in consultation, within a comparatively brief period, to some fifteen or sixteen of these sad cases, three only of which terminated in recovery. Occurring as they do every now and then in series of cases, then being altogether absent for long periods, happening as often, or more often, amongst the higher classes as amongst the lower, the consternation they occasion in provincial society is at once detrimental to the medical man in whose practice they occur, and destructive of public confidence in the resources of our art. You will not wonder, then, that I should have taken pains to convince myself of the true nature of the disease, and will require no apology from me for laying before you the results of my inquiries.

The first point to which I wish to direct your attention is, not the identity or non-identity of the poisons which produce small-pox, scarlatina, diphtheria, or other specific diseases with that which gives rise to true puerperal septicæmia, because a very little examination of such cases on either hand will satisfy you of their entire non-identity, but I wish to inquire whether, in the parturient woman, the poisons of these specific diseases ever by themselves produce puerperal septicæmia of the ordinary character, or are, indeed, capable of doing so.

To answer this question, let us glance for a moment at the symptoms which the poisons of specific zymotic diseases produce both in the parturient and in the non-parturient woman. Now, although I do not affirm that what is called the germ theoryof these diseases is sufficient to explain *all* their phenomena satisfactorily, it is certain that that theory is alone capable of explaining *any* of the symptoms to our satisfaction. The germ theory is thus concisely expressed by Dr. Burdon Sanderson, in those admirable lectures on septicæmia which he delivered at University College at the beginning of the present year. "When a contagious disease is communicated by the atmosphere or by personal intercourse, the conveyance takes place by means of specially-endowed organisms, which stand in a similar relation to the disease to that which a seed does to a plant. For just as the seed is the origin and the offspring of the plant, so, according to this view, the morbific germ produces the disease, and is in turn produced by it." The term "*contagium vivum*" (living organic matter) which is applied to these organisms, implies a *specific* matter, and relates to specific diseases only. It follows that each kind of these specifically-endowed germs should set up changes in the organism to which they may have been introduced entirely distinct from the changes set up by every other kind of germ; so that the course, duration, and general phenomena of each one of the specific diseases should differ from the phenomena of any other of the class. And so we find it to be. There is no running of one into the other, for in every instance these germs are observed to *breed true*.

A second division of the germ theory, and one which has given rise to much more discussion and difference of opinion than that just named, holds that the atmosphere, especially the atmosphere of hospitals and crowded dwellings, teems with organic particles, particles of extreme minuteness and tenuity,—organisms, indeed, but whose existence, in some cases, is rather arrived at by induction than proved by observation, for they are not recognisable by our senses even when aided by the most powerful microscopes. Professor Tyndall has succeeded in isolating them, and when sown upon a suitable soil, such as decomposed blood or disordered secreting organs, produce all the phenomena of the most fatal septicæmia. "It is these organisms," says Dr. Sanderson, "which, entering open wounds or breaches of surface, are the cause of suppuration and of those other destructive changes which interfere with the healing of the wound, whilst, on the other hand, if these particles be absolutely excluded, all putrefaction of an otherwise septic fluid is prevented."

Now it is but a short step from the open wound to the condition of the uterus and its passages in a parturient woman. Taking the open uterine sinuses as so many open wounds, what is to hinder these septic particles of the atmosphere from gaining access to them, and so setting up the same series of changes in this case as in the other, thus making puerperal septicæmia twin sister to surgical pyæmia? And if this deduction be accurate, may we not hope to find a means of excluding the entrance of these germs into the system of the lying-in woman by some such method as that so successfully employed in preventing the contamination of surgical wounds by them, and, by so doing, exempt the patient from the horrors of septicæmia altogether?

We must reply to this question, however, very doubtfully, at least at present. The experiments of Professor Tyndall, M. Pasteur, Dr. W. Roberts, and others, show that it is with the very greatest difficulty that their prepared fluids can be kept free from the contamination of septic germs, which not only float in the atmosphere, but may adhere to every instrument and to every vessel used, as well as to the clothes and hands of the operator. Even boiling water will not always kill them, nor any filter, short of a porcelain one, obstruct them. This being so, how can we hope that these germs will not occasionally be carried in the clothes or by the hands of the obstetrician, of the nurse or other attendant; and if these persons be in the habit of frequenting hospitals, the bedside of sick persons, or others in whose secretions these germs abound, the only wonder is that, instead of being a comparatively rare disease, puerperal septicæmia is not of everyday occurrence. One thing, however, is clear, to my mind at least, that these septic particles, whether introduced to an open wound or into the open uterine sinuses of a parturient woman, never give rise to anything resembling the effects of the poisons of the specific diseases; and therefore that their action upon the system is *sui generis*, altogether as distinct as that of each of the zymotic diseases themselves. As small-pox never becomes scarlatina, or scarlatina measles, so none of these can ever become true septicæmia, such as we see it in puerperal fever or surgical pyæmia.

That these deductions from observed facts are important everyone will admit, but that they are universally or even generally admitted is disproved by what we hear and see almost every day. It has occurred to me on several occasions to hear men, and men of eminence, too, whom I have met in several cases of puerperal septicæmia, ask if the patient has been exposed to the poison of any of the zymotic diseases. Had the accoucheur or the nurse been lately in attendance upon a case of scarlatina or of measles, &c.? Or, has the patient herself, just previous to her confinement, been in some way brought into contact with the contagion of some of these diseases? You cast about, and are probably unable to guess at the possibility, or, at least, at the probability, of such a chance. Or, on the other hand, the unlucky practitioner or nurse gets blamed for a proceeding which, after all, may have had nothing whatever to do with the causation of the disaster.

But suppose that the patient have palpably been exposed to the contagion of, say, scarlet fever, just prior to her lying-in, what are the symptoms we find? In most cases, we find, a few days or hours after delivery, the patient terribly ill, with a hot skin, generally preceded by rigors, rapid pulse and respiration, urine high-coloured and scanty, the head painful, the mind clouded, with a tendency to coma, leading in most cases to speedy death. The milk and lochia have been suppressed from the beginning. And all this passes in three or four days. Now, can we discriminate whether the case be one of puerperal scarlet fever, measles, or small-pox? Except in a very few cases, where death supervenes almost immediately from the profound alteration in the blood, caused by a great dose of the poison, we can. Some of the distinctive features of each of the "zymotics" will be almost surely discernible, such as dusky skin and ulcerated fauces in scarlatina, raised papules in small-pox, and the characteristic blotches in measles. Moreover, cases of zymotic disease usually run the same course in the puerperal state, if the patient survive, as they do in the ordinary patient. Any one of the specific diseases may be contracted by a non-parturient from a parturient person, while there is no

instance of any infection passing from a genuine case of puerperal septicæmia to any other person than one situated like the patient.[3]

I shall prove presently, after adverting to the characteristic features of true puerperal septicæmia, that there is no analogy, save one of the very loosest kind, between the symptoms and the pathological history of the ordinary zymotic diseases and those of septicæmia as it affects the parturient woman. But some still sceptical person may ask why it is that we so often find that scarlet fever, or some other disease of its class, breaks out just at the time of parturition, or a few days after, if it be not connected in some way with the peculiar condition of the parturient woman—transformed, in fact, into puerperal fever? I believe the following to be the explanation:—If the patient have been exposed to the poison of some one of the zymotic diseases a few days prior to her delivery, whether the delivery be at term or not, her delivery is determined at that particular time by the reaction of the poison upon her blood, and then the more obvious symptoms, such as the rash &c., follow in their natural course just after delivery, modification, but not change of character, being the result.

I would here draw a caution from these facts, which may be of the greatest service to us. It is, that, whilst casting about to discover in what way the patient suffering from puerperal fever may have picked up the poison of some contagious disease, to take care that we are not neglecting the true cause of the symptoms, and letting pass the precious moments in which alone the mischief can be arrested, by removal of all that we can of the poison already *at* her person, and by preventing any more gaining access to her. In fact, whilst our minds are occupied with the notion that one kind of poison *may* have got access to her blood, do not let us neglect to remove the septic poison already lodged in her uterus or vagina, or the germs which are gaining entrance there from the atmosphere, or by the vessels or hands used by the practitioner or the nurse.

(To be concluded.)

CASE OF IVORY EXOSTOSIS IN BOTH EARS.

BY GEORGE P. FIELD, M.R.C.S.,
AURAL SURGEON TO ST. MARY'S HOSPITAL.

G. M——, a medical man aged thirty-two, strong and healthy, consulted me on Oct. 4th, 1877. He stated that when a lad at school he had suffered from pains in the right ear, followed by slight deafness. He consulted the late Sir William Wilde, of Dublin, and in a short time he recovered perfectly. In September, 1877, he again became deaf, after bathing in the sea, and as there was some swelling visible in the meatus he took iodide of potassium, and leeches were applied, together with counter-irritation, behind the ear. On Sept. 25th leeches were again applied. On Oct. 1st a somewhat similar condition was discovered in the left ear.

On Oct. 4th he came to London and placed himself under my care. The swelling in both ears looked exactly like a deep-seated boil, and the hearing remained remarkably good considering that only a very narrow passage was left for the conduction of sound. After some days an incision was made into the swelling, the knife coming in contact with a bony growth of a very hard nature. There was no pain and very little redness until the growth pressed against the opposite wall of the meatus, and then slight inflammatory action took place, and the patient became very deaf. He complained of a most distressing fulness in the ears, with severe tinnitus aurium. He suffered from great depression of spirits, and this was augmented in no small degree by the knowledge of the density which characterises an aural exostosis. He knew that his deafness was due to a complete closure of bone, and as he could only hear the watch in contact, he felt that he was thus, from inability to join in conversation, shut out from all society.

On Oct. 11th my colleague, Mr. A. T. Norton, saw the case with me, and it was arranged that an operation would be necessary for the removal of both exostoses.

Oct. 13th.—The patient having been placed under chloroform, I proceeded to drill through the growth in the right ear with the American dental engine, kindly lent me by Mr. Sewill. The exostosis almost filled up the external meatus, and took its origin from the posterior wall, extending from a quarter of an inch from the orifice to within a very short distance of the membrana tympani. I thought it necessary to protect the membrane and its adjacent important structures, as far as possible, by having an instrument made to shield them from injury. Messrs. Weiss and Son therefore made me a soft metal guard, which was passed with slight difficulty along the anterior portion of the meatus, and was then bent to the angle required to pass behind the exostosis. Having obtained the exact shape necessary, another similar instrument was made of steel, which was found to answer the purpose admirably, for it made an accident almost impossible. After working steadily for an hour and three-quarters, I succeeded in drilling through a greater part of the growth. The operation was rendered difficult, not only from the extreme density of the tumour, but also from the fact that the growth was deeply seated, and was repeatedly hidden by the blood persistently filling up the meatus. The patient suffered terribly from sickness for two days after the chloroform, but otherwise went on well.

On the 28th I enlarged the opening in the exostosis of the right ear, under chloroform, drilling completely through the growth. On the 29th he suffered much from sickness.

On Nov. 11th I operated on the left ear. This exostosis was found to be worse than the other for removal, being of larger size. The patient was, as on the former occasion, very sick for two days after the chloroform.

On Dec. 2nd I repeated the operation in the left ear with a larger drill. During this and the subsequent operations the patient took ether, and he did not suffer in the slightest degree from sickness, although he was over an hour under its influence. A large opening was made, and he was able to hear perfectly well for ten minutes or so after the operation. Two or three days afterwards violent inflammation, unfortunately, was set up in the membrana tympani, which became perforated. Six leeches were ordered in front of the tragus, followed the day after by four more. The ear was constantly washed out with a weak carbolic-acid lotion, and the perforation after two or three days completely closed.

Jan. 13th.—The passages of both ears were blocked up again by red granulations; these were removed, and afterwards red oxide of mercury was applied, and also nitrate of silver, in strong solution. These applications gave such intense pain that they had to be discontinued. Tannic acid was then substituted for some considerable time. There was a profuse discharge of thick pus, which completely prevented hearing. This gradually subsided, and now he is able to hear perfectly well all day long, but at night he is again deaf from collection of discharge in the passage; but when this has ceased, his hearing will no doubt be perfect, at any rate in his left ear.[1] The passage in the right ear is very much smaller, and on some future occasion I propose to enlarge the opening.

The ivory exostosis has been observed to be much more common in men than in women. It arises almost invariably from a broad base on the posterior wall of the external meatus, either as a long bony ridge or as a round tumour or tumours. This form is acquired, and not congenital. Its growth is not so rapid, nor have we often any signs of inflammation until the patient becomes suddenly deaf from the complete occlusion of the meatus, and consequent irritation set up thereby. There is another form of exostosis, generally pedunculated in shape, arising, for the most part, from the middle ear, the result of inflammatory process. Its growth is rapid, and the suppuration is plentiful and very offensive, and a polypus, arising from the exostosis, sometimes precedes its appearance into the external meatus. This form may be removed by wire, which means of operation cannot be employed in the other variety, as exemplified in the case I have described. The American dental engine, first suggested for these cases by Dr. Mathewson, of New York, is, I think, perhaps the only instrument likely to suc-

[3] Mr. Bell, of Exeter, refers (THE LANCET, May 25th, 1878) to the immunity of lying-in women in that city from puerperal fever during the late epidemic of scarlet fever there. Although pregnant women, and also nurses, were warned against exposing themselves to the poison of this disease, they gave little heed to the advice. No cases of puerperal fever, however, were proved to result from the exposure. I can testify to the same immunity from puerperal septicæmia in this city, Worcester, during an epidemic of scarlet fever which has lasted over two years; only one fatal case occurring during the two years, and that not attributable to the poison of any zymotic disease. I doubt not but that the experience of the profession in other towns would be found the same.

[1] Since this was written he has quite regained his hearing.

ceed in penetrating such tremendously hard growths of the petrous bone. The patient was seen with me at different times by Sir James Paget, Mr. Dalby, and Mr. Thomas Smith, who kindly gave me their valuable advice. I am indebted to my colleagues, Mr. Norton and Mr. Edmund Owen, and also to Dr. W. Mackesy, of Waterford, for valuable assistance during the operations. For the successful termination of the case I have to thank the patient himself most of all, for the pluck with which, time after time, he submitted to be operated upon (seven hours in all under chloroform and ether) is beyond all praise.

Lower Seymour-street.

A CASE OF OVER TWO THOUSAND BILIARY CALCULI.

BY W. M. DUNLOP, M.B., C.M.,
RESIDENT MEDICAL OFFICER ST. PANCRAS WORKHOUSE, ETC.

M. H——, aged ninety-four, an inmate of the imbecile ward of this workhouse, died suddenly on Feb. 12th last. For the last two years of her life she had suffered from chronic bronchitis, and her mental faculties had, during the last six months, become much impaired. For the last year or two she had occasional attacks of spasmodic, but not acute, pain referable to the hepatic and epigastric regions; and sometimes, when moved in bed, she suffered from pain, also referable to those regions, so severe as to cause her to scream loudly. Physical examination of the hepatic region discovered an enlarged liver. She never had any jaundice. Considering her advanced years, her general health was fairly good, and her body well nourished.

I made a post-mortem examination on Feb. 13th, and as I wish in this paper to call attention to one pathological feature in the case, I only make the following condensed statement of morbid appearances, apart from that to which I wish to refer. The heart was dilated and flabby, and there were two atheromatous patches on the ascending aorta. The mucous membrane of the bronchi was much thickened and pigmented. The brain was soft, its vessels were much diseased, and at its base there was a hæmorrhage, about the size of a penny, the result of rupture of a bloodvessel, and no doubt the immediate cause of the sudden death. On opening the abdominal cavity the liver was found to be much enlarged, weighing 7 lb. 3 oz. There was advanced amyloid degeneration of the entire organ. The gall-bladder projected at the anterior edge of the liver, and it is to its contents I wish to refer. The viscus itself was much dilated, being nearly the size of the closed fist, and its walls were so much thinned and transparent as to render its contents partially visible. The cystic duct was completely occluded, but the ductus communis choledochus and the hepatic duct were quite patent. On opening this enlarged bladder it was found to be packed with calculi, and to contain also nearly an ounce of inspissated bile of a yellowish-red colour.

After carefully cleansing the gall-stones in cold water, and counting them, I found them to amount to the extraordinary number of 2011.

There seems to me to be five different sizes:—Three are as large as a Spanish nut, 27 are of the size of its kernel, 163 are as large as a pea, and 237 are of the size of peppercorns. The remainder, amounting to 1581, vary in size from that of birdseed to that of "sparrow-hail" shot. The smallest (or any) of these stones, when examined under a magnifying glass, does not show any signs of fracture, or other appearance suggestive of it being a fragment of another or larger stone.

The total weight of the calculi amounts to 737¼ grains. Nearly all of them sank when placed in water, the few small ones which floated being probably porous, sinking in a few minutes to the bottom.

In shape, they presented the usual form of biliary calculi, possessing several surfaces of various sizes, with rounded lines and angles, the result being that the contour is rather irregular, but with a general tendency to assume the globular shape. They are all distinctly facetted, some more so than others, the facets numbering in some instances five, in others three, while in others, again, only one facet can be distinguished.

All the larger stones are covered with a layer of yellow inspissated bile, but when this coating is gently scraped off, the calculus is seen to be blackish-grey on its surface and somewhat transparent. The smaller stones have but a small quantity of this coating; many have none, and these are smooth and blackish-grey in colour, some of the smallest being almost entirely black.

The great majority of the stones are composed of cholesterine. A section of one shows a concentric arrangement, there being bile-pigment in the centre, and other layers of pigment alternating to some extent with layers which are less pigmented.

When the bladder was opened, a few of the minutest of the stones were adherent to its mucous membrane, were irregularly-shaped, and of a decided black colour; and as they did not give any characteristic reaction with sulphuric acid, I conclude that they are composed entirely of biliary pigment.

Remarks.—The peculiar features of this case are:—

(1) The absence during life of any decided signs or symptoms indicative of the presence of gall-stones. I had, indeed, *suspected* their presence in my endeavour to discover the cause of the pain above referred to, and I had the alvine evacuations, which were sometimes rather surcharged with bile, frequently examined, but I never succeeded in finding any calculi or "biliary gravel" in them. The pain, although at times rather severe, had not the usual agonising character of that attendant upon the presence or transit of gall-stones, and it never was accompanied with rigors or vomiting. Perhaps this is one of those cases in which Dr. Heberden would have ascribed the pain to a gastrodynia. The absence of jaundice in the case is of course at once explained by the fact that the cystic duct alone was occluded.

(2) The presence of gall-stones composed exclusively of biliary pigment. These stones are usually considered to be of some rarity.

(3) The number of the calculi (2011). Larger numbers have, indeed, been recorded, Burseus gives one case in which the number amounted to 2646; Tasch and Meckel found upwards of 3000; and a case of Otto's is on record in which 7802 calculi were counted, as quoted by Dr. Thudichum in his excellent treatise on "Gall-stones." On the other hand, Dr. Thudichum states that the most common number to find is from two to ten, and that the size of calculi stands in an inverse ratio to their number. But I think that this case forms an exception to this rule, inasmuch as all the stones are of appreciable size and distinct outline, their size, considering their number, being greater than that usually met with. There was not the slightest appearance of anything like "gravel" or "dust" in the gall-bladder, or among the stones.

As regards the cause of the formation of these stones. According to Dr. Harley, the liver, when healthy, has the power of keeping the cholesterine of the bile in solution, and thus it may happen that when the liver is diseased, as it was extensively in this case, this power is wholly or partially suspended, and cholesterine is set free to deposit in the form of calculi. On this hypothesis therefore the formation of gall-stones in this case was due originally to organic disease of the liver, and the different ranges of sizes of stones which were noticed, and which seemed to me to suggest different periods of formation, may, perhaps, have been the result of that organic disease being more active at one time than at another.

ABSTRACT OF A LECTURE ON

BUTYL CHLORAL.

Delivered by

PROFESSOR OSCAR LIEBREICH.

Reported by J. GRAHAM BROWN, M.B., C.M.

IN the course of a lecture which he delivered on the 18th of December, 1877, and which I had the advantage of hearing, Professor Oscar Liebreich, in treating of butyl chloral, made some observations which may be of use to English medical men.

In referring to the chemical composition of this substance, the learned lecturer pointed out that the name which was formerly applied to it—croton chloral—was incorrect and

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very misleading, as it has no relation to croton oil, and that it ought therefore to be discontinued.

In the human subject, as well as in the lower animals, the first action of the drug is to produce anæsthesia, which begins in the head and gradually passes to the rest of the body, reflex irritability remaining intact in the limbs for some time after it has been abolished in the head. Then follows narcosis; but it is important to observe that anæsthesia in the head and face may be complete before any trace of narcosis manifests itself. From a consideration of this fact Professor Liebreich suggests the use of butyl chloral in operations on the face, in cases where other anæsthetics are contra-indicated. The dose for this purpose is from one to two grammes (15 to 30 grains).

The chief interest of the lecture lay, however, in the remarks made as to the action of butyl chloral on the heart, and the manner of death in fatal cases. It was pointed out that whereas in the case of chloral hydrate the heart was paralysed and its action ceased before the movements of respiration came to an end, the reverse held good in the case of butyl chloral. A fatal dose of that substance attacks the respiratory centre in the medulla oblongata and paralyses it, while the heart is unaffected and continues to pulsate for some time after death.

To demonstrate this fact Professor Liebreich showed two rabbits, both of which were in a state of complete narcosis, the one from the effects of chloral hydrate, the other from butyl chloral. In the case of the first animal the thorax was opened just as all respiratory movements ceased. The heart was lying motionless, both ventricles being dilated and filled with blood. Artificial respiration had no effect in reproducing the cardiac contractions. But, on the other hand, when the thoracic cavity of the rabbit poisoned with butyl chloral was opened (at exactly the same stage) the heart was found to be beating regularly, and to all appearance normally. After about two minutes the beats, which during that period had become slow, ceased. Artificial respiration at once restored the pulsations, and so long as the rhythmical inflation of the lungs was kept up, the contraction of the heart continued; thus affording an admirable illustration of the views as to the action of the drug which had been enunciated in the course of the lecture. Professor Liebreich also indicated that this property gave the drug considerable advantage as an anæsthetic for vivisectional purposes, especially in England.

The lecturer, in conclusion, adverted to the value of butyl chloral in cases of tic douloureux, and advised its administration, dissolved in glycerine and water, rather than in alcohol, in doses of from one to two grammes.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

CYSTIC SARCOMA OF LOWER JAW, REMOVED WITHOUT EXTERNAL INCISION.

(Under the care of Mr. MAUNDER.)

WE are indebted to Mr. G. T. McKeough for this report of a remarkable example of Mr. Maunder's ingenious method of removing tumours of the lower jaw.

Anna L——, a Jewess, aged fifty, was admitted on Feb. 19th, 1878. She stated that she was married, and the mother of ten children, all of whom were living. Both her father and mother had been healthy, and died of old age at eighty and seventy years respectively. There was no history of cancer, phthisis, or scrofula in the family. She had always enjoyed good health herself, and all her children were robust and healthy. Ever since she was a young girl she had had a small lump, about the size of a walnut, on the lower part of the body of her under jaw, to the right of the symphysis. This caused her no inconvenience whatever and but slight deformity—so slight, indeed, that she had had nothing done for it. She could assign no cause for the tumour. Although stationary for many years, the tumour began to grow ten months before admission, and continued to enlarge slowly for eight months; it then increased more rapidly.

On Feb. 20th the tumour was removed, without any external wound, by Mr. Maunder's method, as described below. The patient rested well during the night, and felt quite comfortable next morning. She took her food—milk, beef-tea, and strong broth—without any difficulty, and evidently relished it, feeding herself with the aid of a spoon. No hæmorrhage had occurred. Temperature in the evening, after the operation, 101·8° F., and on the following morning it was 101° F.; pulse 120; respiration 24.

On the 22nd she complained of the tongue being swollen, and of a fetid odour arising from her mouth; otherwise she was comfortable. Sensation was as good on the right side of the face as on the left, except in the regions supplied by the right mental nerve, which she said felt numb. A considerable quantity of saliva and mucus dribbled from the corners of her mouth. Temperature in the morning 100·2° F.; pulse 106; respiration 22.

On the 24th temperature was 99·6° F.; pulse 100; respiration 20. She was rapidly recovering from the effects of the operation, and complained less of her tongue and of the odour from her mouth.

On the 26th the temperature, pulse, and respiration were normal. She continued to take her nourishment well. Ordered minced meat and three ounces of brandy. One or two stitches attached to the tongue were removed.

On the 28th the small laceration produced by the large size of the tumour on extraction had completely healed, leaving only the remotest trace of a scar. Temperature and pulse normal.

On March 2nd the slight numbness which she felt about the right side of her chin was disappearing. She moved her tongue with almost as much facility as before the operation. There had been no hæmorrhage since the removal of the tumour. She took solid food without much difficulty. Complained a little of her upper teeth protruding beyond her lower. She sat up or walked about the ward the greater part of the day.

A small abscess formed just below the divided symphysis, and was opened by the house-surgeon on March 12th, and about a thimbleful of pus was discharged; otherwise she progressed most favourably.

On March 14th the small incision had healed, and the patient considered herself cured. Her appetite was much better than before the operation. A fibrous band was seemingly forming between the divided portions of bone.

On April 2nd the patient left the hospital.

Mr. Maunder remarked that during the last eight years he had removed large lateral portions of the lower jaw, the seat of tumour, three times at the hospital, without making any external incision. He showed photographs of the patients subsequent to operation. Before attempting the operation in the above case, he expressed anxiety lest, having set free the tumour, he should be unable, on account of its size, to extract it entire through the mouth. The real size of the tumour was not manifest externally; the floor of the mouth was also occupied by it, and the tongue was displaced to the left side. The operation was conducted as on former occasions, the patient being seated in a dentist's chair. No external incision was made, but the portion of jaw, the seat of tumour, was liberated by the knife, raspatory, saw, and bone-cutting forceps used within the mouth. As the operation proceeded one large cyst burst, and collapsed, and it was hoped that this diminution would be sufficient to make extraction easy. But it failed to do so, and as the tumour was being slowly withdrawn by a large pair of lithotomy forceps, the right angle of the mouth split to the extent of three-quarters of an inch. Under similar circumstances, Mr. Maunder would in future tap all existing cysts before attempting extraction, or he would remove the tumour piecemeal, after cutting it free from healthy structures.

Mr. Maunder claims for his method of operating: absence of hæmorrhage, the facial vessels not being wounded; avoidance of ligatures; non-interference with the muscles of expression, and consequently avoidance of paralysis and the deformity which results from division of the branches of the

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facial nerve; and, lastly, the absence of a long, unsightly scar on the cheek.

FIG. 1.

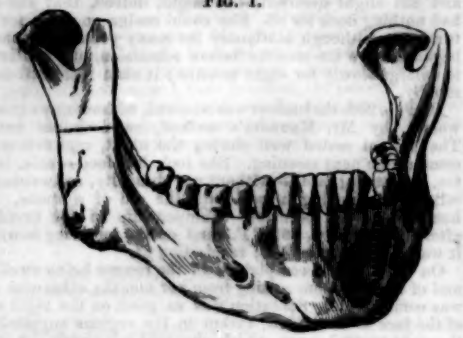


FIG. 2.

FIG. 3.

The woodcuts show—(1) on a healthy jaw-bone, between the dotted lines, the extent of bone removed; (2) the appearance of the patient *before* operation; (3) the right side of the patient's face six weeks *after* operation.

WESTMINSTER HOSPITAL.

CASE OF CHANCRE ON RIGHT SIDE OF PENIS AND BUBO IN LEFT GROIN.

(Under the care of Mr. A. PEARCE GOULD.)

T. M——, aged thirty-two, attended as an out-patient on May 22nd, 1878, with a sore on the penis. It was sharply cut, circular, depressed, and had a greyish-yellow sloughy base. It was seated on the right side of the sheath of the penis; the lowest point of its circumference was three-quarters of an inch to the right of the lower median line of the penis, and its edge was still further removed from the upper median line. In the left groin there was a suppurating bubo. There were no enlarged glands in the right groin. He had no gonorrhœa, nor any sore on the lower limb. There was no history of strain, nor of injury, nor other ascertainable cause of the bubo. The patient had noticed the sore on the penis for three weeks, and a week after the first appearance of the sore he felt pain in the groin, and discovered a lump there three or four days later, which gradually increased to its present size. The man was admitted into the hospital through the kindness of Mr. Cowell. The bubo was opened, and the chancre treated with iodoform ointment, and in a few days he left convalescent.

Remarks by Mr. GOULD.—There can be no doubt that the cause of the bubo in this case was the absorption of irritant matter from the sore on the penis, for there was an entire absence of any other efficient cause. The interest in the case lies in the fact of a sore distinctly on the *right* side of the penis producing a bubo in the *left* groin, showing a crossing of the lymphatics from the right to the left side, from which it may reasonably be inferred that there was a decussation of these fine channels (those of the left side passing over to the right). Such cases are not rare. While surgical registrar at University College Hospital I saw two such cases in that hospital. One was a man under the care of Mr. Marshall, admitted with a large bubo in the left groin from a soft chancre on the right side of the glans penis. The other was a woman, under the care of Mr. B. Hill, with a soft chancre on the right labium and a bubo in the left groin. In this case a bubo subsequently developed on the right side. And I have met with other cases of this "cross lymphatic infection" among the out-patients, but of these I have no notes. Each of the cases mentioned above had the sore on the right side and the bubo on the left. This is probably accidental, as might be shown by a larger number of cases. When the arrangement of the lymphatics in a fine network is borne in mind, the occasional occurrence of this "cross infection" will not be surprising.

PETERBOROUGH INFIRMARY.

COMPOUND COMMINUTED FRACTURE INTO THE ANKLE-JOINT; IRRIGATION WITH ALCOHOLIC SOLUTION OF COAL TAR; RAPID RECOVERY.

(Under the care of Dr. T. J. WALKER.)

FOR the following notes we are indebted to Mr. C. R. Illingworth, M.B.

Samuel M——, aged twenty-four, of unsteady habits, whilst riding, in a state of intoxication, on the shaft of a trolley loaded with two hundredweight of piping, was thrown upon the ground in consequence of the wheel rolling off the kerb-stone. The left wheel passed over his right foot from heel to ankle. On admission (March 30th, 1878) there was a longitudinal wound two inches in length in front of the ankle, opening into the joint, from which blood was oozing pretty freely. The ligaments in front of the joint were torn across, so that the articular surfaces, bare and comminuted, could be felt through the wound. The fibula was fractured a little above the malleolus, and the tibia was obliquely fractured, the articular surfaces being to a great extent separated and comminuted, although the inner malleolus remained continuous with the shaft and its ligamentous attachments to the bones of the foot were intact. There was no displacement of the foot. Irrigation was employed in the following manner:—The limb having been laid on its outer side, flexed at the knee and kept in position by sandbags, a gutta-percha dish, with a spout for the purpose of carrying off the liquid, was placed beneath the foot, and a tin containing the fluid for irrigation was hung above the limb. The fluid employed was an alcoholic solution of coal-tar, one part of the solution to sixty of water. The "drip" action was secured by several worsted threads tied to a piece of metal at the bottom of the tin, and brought over the edge so as to hang directly over the wound. A piece of linen, wet with the lotion, was laid upon the wound, with its ends cut so as to carry off the lotion into the dish beneath the foot.

On the second day after the injury a dusky redness of the skin, with œdema, extended up to the knee, and the foot was

very much swollen and inflamed; but the edges of the wound looked quiet, and its surface was covered with coagulable lymph and unaltered blood. The morning temperature was 99°, the evening 100·2°, and the patient said he was comfortable.

The inflammatory œdema of the leg completely subsided in four days, and that of the foot in a week. The temperature on the fifth day was 100·8°, on the sixth 99·4°, and after that it varied from 99° to 98·4°. The pulse never rose above 88. In fact, there was no constitutional disturbance.

The coagulable lymph which filled up the gaping wound and everted its edges remained hard and glazed until the seventh day, when granulations began to sprout from its surface, and were soon covered with laudable pus.

On the seventh day a slough below the external malleolus was incised, and on the twenty-first day a large slough of the injured skin separated below the internal malleolus. On 19th of April (three weeks after the accident) the drip was discontinued, and the wounds, now quite superficial and covered with healthy granulations, were dressed with resin ointment. On the 4th of May he became an out-patient, and had then some power of flexing and extending the ankle, which promised a full and free action of the joint in no long time.

QUEEN'S HOSPITAL, BIRMINGHAM.

RESECTION OF KNEE-JOINT; RECOVERY, WITH USEFUL LIMB.

(Under the care of Mr. JAMES F. WEST.)

FOR the following notes we are indebted to Mr. Wilkins, house surgeon.

Susan H——, aged twenty-six years, housemaid, was admitted on Sept. 24th, 1877. The family history was good, except that the father died "consumptive."

In the month of May, 1874, she first noticed two lumps, one upon either side of the right knee. These did not disappear, and in a short time the whole knee-joint became swollen. She experienced pain in the part, especially upon exertion, and was compelled to take rest at intervals during the next three years. About three months before admission another swelling formed at the back of the joint. This, she said, "gathered up and broke in about eight weeks, and discharged a large quantity of matter." No bone had ever come away. The patient could not give any history of injury, but she had had a great amount of kneeling. She had had no previous illnesses.

On admission the right knee was generally enlarged, and was slightly flexed. At the outer and back part of the head of the tibia there was the opening of a sinus, which passed downwards and forwards for about three inches. The patella was slightly movable, but there was no fluctuation across the joint. The lower end of the femur was slightly expanded, and the head of the tibia much more so. There was no redness of skin nor enlargement of the superficial vessels. There was great tenderness upon pressure. She was able slightly to flex the knee. The following measurements were taken:—

	Right limb.	Left limb.
Over the centre of the patella,	14½ in.	13 in.
2 in. above "	13 in.	12½ in.
2 in. below "	13¾ in.	11 in.

A probe was inserted into the sinus, and, a counter-opening having been made, a drainage-tube was inserted, and a weight and pulley apparatus was applied. Temperature 103·7° F.

She continued to get worse during the month of October. The joint became more swollen; there was distinct fluctuation in the joint. The temperature continued high, with morning intermissions, being seldom less than 100°, and often rising to 103°. The appetite failed, and emaciation was becoming very marked. The pain increased, and became so great at night that it prevented sleep, and disorganisation of the joint had evidently set in.

On Nov. 3rd the joint was opened. A single straight incision was made across the joint, just below the patella, and a slice, half an inch thick, was sawn from the head of the tibia. As, however, the cancellated structure of that bone was very soft and carious, the gouge was freely used, so that a cavity was made in it large enough to contain a hen's egg. A small thin slice was then taken from the eroded articular surface of the femur, but the patella was left *in situ* after its surface had been slightly gouged. The operation was performed under Lister's antiseptic method, and the limb was put up in gutta-percha with Nathan Smith's splint before the patient was removed from the operating table.

The wound was dressed daily after the operation. The temperature remained high, especially at night, averaging about 102° F. during the first week. The sutures were removed on Nov. 7th, when the wound was found to be entirely united. The discharge was a bland yellow serum, without offensive odour.

Steady improvement in the patient's condition ensued, the pulse increasing in strength, and the temperature falling daily.

On Nov. 19th a plaster-of-Paris case was applied from the toes to the pelvis to fix the limb immovably.

On Dec. 1st a small abscess, which had formed over the head of the tibia, was opened, and after that the limb was dressed antiseptically every second or third day.

During January the wound firmly healed with the exception of a small sinus at the outer angle, which did not, however, appear to lead to carious bone. Pain entirely ceased, appetite returned, the temperature fell to normal, and by the end of the month, when the plaster case was removed in order that a fresh one might be applied, the woman was able to lift the limb without assistance. On Feb. 4th she was discharged cured. She was able to walk about with a crutch, there being not more than one inch of shortening, the patella was slightly movable, and the front of the joint looked broad, firm, and strong. She had increased considerably in weight since the operation, and had taken no medicine except a little quinine and an occasional opiate, but throughout she had had a generous diet and four ounces of port wine daily.

Remarks by Mr. WEST.—The above case illustrates the good result of antiseptic treatment in resection of the knee-joint, the advantage resulting from a very moderate division of the soft parts, a single straight transverse incision giving ample room for the use of Butcher's saw in making sections of both the tibia and femur, and the increased strength and solidity given to the limb by the retention of the patella, and by constant immobilisation of the parts by means of a plaster-of-Paris apparatus.

There are several interesting features in this case. The joint disease had clearly resulted from inflammation of the head of the tibia, leading to caries, which had existed for a long time before she came under my care. All kinds of counter-irritants, combined with immobilisation, had been resorted to without success. The whole of the structures of the joint were involved, but the greatest mischief was in the cancellous tissue of the head of the tibia. The patient's strength was exhausted, and hectic fever was quickly bearing her to the grave. This was obviously not a case for palliative or expectant treatment; the question that arose was, Had the poor girl sufficient stamina to go through the protracted convalescence which must necessarily attend resection of the knee-joint, or was it right, with a view of saving her life, which in November was in great danger, to resort to amputation of the thigh?

Having myself great faith in resection, especially in young subjects, and being extremely averse to amputate for almost any kind of joint mischief, without first making trial of resection of the affected joint, I determined to try what I could do for her by resection of the knee.

When I opened the joint, and discovered how largely the caries of the tibia had extended, I feared that I had made a mistake in endeavouring to save the limb, and that so much of it would have to be taken away that, if the patient did recover, which seemed somewhat improbable, it would be with a shortened and comparatively useless limb. Having, however, determined on resection of the joint, I carried it out, but having to remove so much of the tibia, I took away as little as possible of the femur, and I left, as I always do where practicable, the patella, to help to strengthen the front of the resected parts.

MR. RICHARD DAVY has been elected surgeon in charge of the Orthopædic Department at the Westminster Hospital, and lectures on the surgical and mechanical treatment of deformities will be given during each summer session. Patients will be seen on Fridays, at 3 P.M., without letters of recommendation.

PROVINCIAL MEDICAL SOCIETIES.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.—At the meeting on June 5th, Mr. JOS. BELL exhibited portions of Diseased Bone removed from the head of the radius by the mallet and chisel with antiseptic precautions. The case did well, and the movements of the limb were restored. Mr. Bell also showed a man who had been run over by a tramway car, the wheels of which passed over his left thigh, cutting through the adductors and the femoral vein. The artery was uninjured. Much sloughing took place, and an abscess formed along the course of the vein. The good result was owing to the antiseptic treatment employed in the case.—Dr. KIRK DUNCANSON showed a specimen of Aural Polypus removed from the external surface of the membrana tympani of a patient who had been under treatment for catarrh of the tympanum. The polypus was of the size of a large pea, had been growing for less than a month, and apparently arose in an effusion of blood. Dr. Duncanson also showed Helmholtz's Model for illustrating the Mechanism of the Ossicles of the Ear, and the effects produced through them upon the labyrinth by sound waves. He also demonstrated Professor A. M. Mayer's dynamic signification of Fourier's theorem—viz.: "Every periodic vibratory motion can always, and always in one manner, be regarded as the sum of a certain number of pendulum vibrations," which, in acoustics, may read as follows: "Every vibratory motion in the auditory canal corresponding to a musical sound can always, and always in one manner, be considered as the sum of a certain number of pendulum vibrations corresponding to the elementary sounds of the given musical note." The experiment showing this well illustrates Helmholtz's hypothesis of audition, founded on the supposition that the rods of Corti co-vibrate to simple sounds, so that a sound falling upon the membrana tympani is decomposed into its sonorous elements in the ear.—Dr. BYROM BRAMWELL read a paper on "Cases of Intra-Cranial Tumour, with specimens." He gave abstracts of about twelve cases, many with post-mortem examinations. In some of the cases the cerebral lesions in relation to the symptoms during life did not accord with modern localisation theories. Double optic neuritis was present in nearly all the cases, many of which were of syphilitic origin.—Dr. Argyll Robertson said that optic neuritis might be present in cases where no intracranial disease was found after death, and that cases occurred (but rarely) where intracranial disease existed, but no neuritis. Generally vision was not affected in the earlier stages of optic neuritis, not until atrophy of the nerve had taken place.—Dr. Clouston, referring to the symptoms presented by four cases of intracranial tumour in lunatics, said that the symptoms varied according as the more vital parts of the brain were affected, according to the rapidity of the growth and its nature, and to the production or not of degenerative changes in the brain. In cases of sudden arrest of the respiratory centres the blood is fluid after death. When the mental functions are affected, there is first irritability from want of nourishment of the brain, then a maniacal condition from incipient inflammation, and, lastly, dementia. He mentioned a case where a sarcoma of five years' growth had caused the protrusion of portions of the brain through the dura mater, so that on removing the skull-cap the membrane was covered with small cauliflower excrescences composed of normal brain-substance. He believed strongly in the good effects produced by the long-continued administration of large doses of iodide of potassium.—Dr. Cadell pointed out the possibility of a person having syphilis at one time of his life without the syphilis being the cause of all subsequent diseases.—Dr. Wylie asked Dr. Byrom Bramwell whether, in the case of left hemiplegia with aphasia, the patient was left-handed or not.—The President (Professor Sanders) pointed out the value of accurate localisation of tumours with regard to special paralysis. Experiment had not in the past been confirmed by clinical observation to the extent to be desired. When a tumour is of slow growth, the brain no doubt adapts itself to the disturbance, and other parts of the brain take on the functions of those which have been destroyed. Cerebral pathology still requires great attention.—Dr. Byrom Bramwell, in reply, expressed his regret that time had not allowed him to give the cases in greater detail. He had found that iodide of potassium in large doses, and continued for a long time, produced less iodism. It was necessary to distinguish cases of intracranial disease from lead-poisoning. There were well-marked traces of syphilis in all the cases he had ascribed to that cause. The case of left hemiplegia with aphasia was what Hughlings-Jackson had described as "destroying" paralysis, as distinguished from "discharging."

EDINBURGH OBSTETRICAL SOCIETY.—At the meeting on June 12th, Dr. Wilson, President, in the chair, Professor SIMPSON read a paper entitled "Notes on a Case of Pelvic Hæmatocele." A lengthy discussion followed; and Dr. UNDERHILL read "Notes of Three Cases of Accidental Hæmorrhage."

Reviews and Notices of Books.

Notes on Rheumatism. By JULIUS POLLOCK, M.D. London: J. and A. Churchill. 1878.—The substance of these excellent and practical notes originally appeared in the columns of THE LANCET, and the profession will be grateful to Dr. Pollock for affording an opportunity for their reperusal in a convenient and portable form. Their tone is thoroughly practical, and the reader is made to feel that the knowledge of the author is derived from actual experience. This is not the case with much of the medical writing of the present day, to which Dr. Pollock's work is, in many points, a strong contrast. Terseness and brevity are qualities which the modern medical author too often seems to despise, and provided a book of a certain weight and length is produced, he cares but little how small is the amount of information vouchsafed. Dr. Pollock is a strong advocate for the use of salicylate of soda in the treatment of acute rheumatism, and finds that it is advantageous to combine it with small quantities of carbonate of ammonia. He doubts whether the generally received doctrine that one attack of rheumatism predisposes to another, be correct. He thinks rather that the first attack merely indicates the peculiar diathesis of the individual. He regards an attack of sudamina as an unfavourable indication, and to the form of acute rheumatism which is characterised by an excessively high temperature he assigns the epithet "malignant," a term which we think may very well be accepted. The chapter on Muscular Rheumatism in its various forms is fully as practical and instructive as are those devoted to Rheumatic Fever.

The Antagonism of Therapeutic Agents, and what it Teaches. By T. MILNER FOTHERGILL, M.D. London: Macmillan and Co. 1878.—To this little essay from the facile pen of Dr. Fothergill the Medical Society of London awarded its Fothergillian gold medal in the present year. The amount of work which has been done by various physiologists in elucidating the question of the antagonistic action of drugs has, of late years, been very large indeed, but such work has now practically come to an end, owing to an Act of Parliament which has been forced on the medical profession. The book is not much more than a compilation of matter which has appeared in various places previously, and those who have had the patience to read all the recent monographs on the physiological action of the alkaloids will not find in it much, if anything, that is new. The majority of the profession, however, have not been so diligent, and these will feel grateful to Dr. Fothergill for his painstaking summary. We would suggest that many of the facts might be given in a tabular form, and we think if this had been done the reader would have been saved much labour, the facts would have appealed more effectually to his understanding, and would have remained, probably, longer in the memory.

Davos-Platz: A New Alpine Resort for Sick and Sound in Summer and Winter. By One Who Knows it Well. pp. 239, with Map. London: Stanford. 1878.—A very short time has elapsed since Davos-Platz, a small Alpine village, was introduced to the notice of the public and of physicians as a place specially suited for pulmonary invalids. Most of our professional readers are by this time fairly convinced that among climatic prescriptions, a clean, clear, and dry air ranks foremost; that if this condition is fulfilled, the temperature of the air may be made somewhat of a secondary consideration, but that this condition cannot be fulfilled except at a geographically high altitude. During the past two years THE LANCET has from time to time contained notes anent Davos sufficiently well compiled and authenticated to place them beyond the range of mere superficial jottings. Hence, although the book before us loses value on the score of anonymous authorship, we have read it with much satisfaction, have gained from it much useful information, and, with our previously-acquired knowledge of Davos, can recommend it to all who are specially interested in the climatic treatment of pulmonary and other diseases. The book certainly seems to be written by one who knows the place well. It contains a categorical sketch of the past and present condition of Davos, describes its summer and winter aspects, its walks and excursions, the flora and fauna of the country around, and its so-called natural resources, and it can be utilised also as a sort of "Murray's Guide," for it gives sufficiently minute particulars as to travelling, living, &c., and the cost thereof. There is not much science in the book, and the writer starts with a firm belief in the climatic virtues of the place, which belief is expressed very enthusiastically, and perhaps at too frequent intervals. But the little work is very welcome at the present time, and supplies a want that has already been felt as to Davos, and is felt, too, by many as to other places about which no descriptive sketch of this sort exists. If those who know such places well would follow our author's example, and spend some of their leisure in condescending to describe little things simply, they would be employing time and energy in benefiting themselves and others.

The Human Eye: its Optical Construction popularly explained. By R. E. DUDGEON, M.D. pp. 92. Hardwicke and Bogue.—The essential features of this little treatise are an interesting description of subaqueous vision with the normal eye, and a means of rendering such vision good by the application of a double concave air-lens made by fixing two strongly-curved watch-glasses in a frame with their concavities looking outwards. Such lenses not only give clear vision under water, but offer no impediment to perfect vision in air, and, being comparatively light, might easily be adapted for divers. The idea is an ingenious one, and might prove useful. The second point, in which, however, we are unable to coincide with Dr. Dudgeon, is a theory he advances in regard to the mode in which accommodation is effected. After reviewing the various ideas that have been broached at different times upon this confessedly obscure subject, and on the strength of certain experiments he has made on the reflection of images from the cornea and lens, he arrives at the conclusion that accommodation is effected by the rotation or tilting of the lens towards one side or the other by the partial action of the ciliary muscle. After carefully reading his observations, it appears to us that Dr. Dudgeon's explanation presents more difficulties even than that usually accepted, and is inadequate to account for the effects observed.

Surgical Evidence in Courts of Law. By J. E. ERICHSEN, F.R.S. London: Longmans, Green, and Co. 1878.—These papers, which appeared originally in THE LANCET, have been reprinted by their author. It is unnecessary to recapitulate the opinions expressed in them, since these must be well known to our readers. Mr. Erichsen's suggestions are, in our judgment, most valuable, and coming as they do from one whose practical experience, both as a surgeon and a skilled witness, is unusually wide, they ought to carry weight. We commend the study of Mr. Erichsen's *brochure* to the members of the bar, and especially to those who, as members of the House of Commons, are practically interested in the reform of our judicial system.

Die Medicinal-Gesetzgebung des Deutschen Reichs. Begründet von Dr. G. M. KLETKE. Band iii. pp. 384. 12mo. Berlin. 1878.—This volume contains an abstract of all the laws and regulations issued in Germany in the course of last year having a direct or an indirect bearing on public health. The first are those relating to, and intended to prevent the extension of, the rinderpest. Minute directions are laid down as to maintenance in a clean state of all sheds, stables, waggons, railway trucks, &c., with weekly supervision by the members of the police of all cattle—measures that only make one regret that they are not made compulsory in regard to human habitations. The orders referring to deaf and dumb institutions follow. The deaf and dumb are directed to be taught articulation, writing, reading, and arithmetic, religion, geography and history, handwriting, drawing, gymnastics; and the girls, in addition, sewing and other womanly duties. To this succeed the regulations for lunatic institutions and hospitals, instructions for vaccinators, orders in respect of the disposal of sewage, in respect of graveyards, in respect of the disposal of the refuse of trades, the sale of poisons, &c. The work will be useful to those who are engaged in sanitary engineering.

The Birmingham Medical Review. New Series. No. 3. July, 1878. Birmingham: White and Pike.—This number is largely surgical, and Professor Sayre must feel gratified by the considerable attention bestowed upon his recent contributions to literature, and the high praise awarded to them, in the pages of this Review. Antiseptic surgery, or, as the writer of the article frequently styles it, "Listerism," is dealt with in the opening pages of the number. The article is highly laudatory of the process, as the following sentence shows:—"There is, therefore, but little doubt that at no very distant period any ovariotomist or surgeon who operates in hospital practice without using Listerism, either in its present form or some improved method which time and experiment may show to be beneficial, will be held not to regard the welfare of his patient as the primary consideration." This is strong advocacy, and is plainly spoken, but the whole current of the article, which goes largely into the statistics of the subject, points to the conclusion thus arrived at. On the whole, the Review maintains its character. The style of printing and paper are especially to be praised.

Statistique du Mouvement de la Population en Espagne de 1865 à 1869, suivie d'une Etude sur la Natalité et la Mortalité dans chacune des 49 Provinces du Royaume. Par le Dr. ARTHUR CHERVIN. pp. 140. Paris: J. B. Baillière et Fils.—This is a work of interest, not only to the vital statistician, but to all who have concern with the internal condition of Spain. So little is generally known of the vital statistics of that country, that Dr. Chervin's contribution is a welcome addition to our knowledge of the subject.

THE deaths registered in London last week numbered 1589, and included 11 from small-pox, 16 from measles, 20 from scarlet fever, 8 from diphtheria, 85 from whooping-cough (a considerable decline on the returns for many weeks past), 19 from different forms of fever, and 249 from diarrhœa. These 249 deaths included 195 of infants under one year of age. There were 71 fatalities from different forms of violence.

MORTALITY IN METROPOLITAN PAUPER SCHOOLS.

MORE or less frequent outbreaks of ophthalmia in pauper schools not unnaturally suggest doubts as to the sanitary condition of these establishments. Local Government Board reports, however, may be searched in vain for the necessary data from which to estimate their sanitary condition. The average number of metropolitan children resident in pauper schools is now very little short of, if it does not exceed, ten thousand. Carefully compiled sickness and mortality statistics relating to such a number of children of the school ages could not fail to have a practical value beyond the light they would throw upon the way in which the health responsibilities relating to this juvenile population are discharged by the various authorities upon whom they rest. It is difficult, moreover, to understand how the Local Government Board can maintain a satisfactory and efficient superintending control over the discharge of these responsibilities, unless such sickness and mortality statistics are placed before them. We have, however, reason to believe that no such statistics have ever yet been compiled, and the facts upon which the following figures have been based have been obtained from various, and in some cases unpublished, sources.

It is somewhat remarkable that with regard to the mortality of children in pauper schools much misconception exists, not only as regards the ratio actually prevailing, but as to the average rates that should prevail among children at the ages of the inmates of these establishments. Mr. Edwin Chadwick, C.B., in his address on "Health," at the Aberdeen meeting of the Social Science Association last year, made some startling statements with reference to the rate of mortality among children in pauper schools. He said:—"The mean death-rates in those institutions have been steadily reduced to about 3 per 1000—that is to say, to nearly one-fourth of the general death-rate of children of the school ages, including the children of the well-to-do classes of the population." With regard to the statement that the annual rate of mortality among the children in workhouse schools has been reduced to 3 per 1000, a doubt as to its accuracy was suggested, not only by the knowledge that no trustworthy basis for calculating the rate of mortality in these institutions had been published, but also by the obvious inaccuracy of the implied statement that the general death-rate among English children of the school ages was equal to 12 per 1000. The investigation with which this paper deals was undertaken, in great measure, to test the accuracy of Mr. Chadwick's statement just quoted, which, if true, assumes an importance that cannot be over-estimated, and which, if inaccurate, is mischievous in conveying an entirely false impression as to the health results of training pauper children in large public institutions.

It has been stated that the number of pauper children in metropolitan pauper schools is now little short of ten thousand. The average number residing in sixteen pauper schools during 1875 was 8360. This number increased to 8360 and 9199 respectively in 1876 and 1877. We have to acknowledge the courtesy of the Local Government Board, by whom we were furnished, from unpublished sources, with the facts from which these average annual numbers of children resident in the sixteen schools during the past three years have been calculated. We had intended to extend the inquiry over the five years 1873–7, but were unable to obtain from the Local Government Board a return of the numbers resident in the two earlier years. The deaths recorded among the inmates of these sixteen schools were partly ascertained from the annual reports of the Registrar-General, which give the annual deaths in all the principal public institutions of England and Wales, and partly by reference to the certified copies of the local death-registers deposited at the General Register Office. The accompanying table shows the names of the sixteen pauper schools embraced by this inquiry, arranged in the order of their size; also for each school the average number of children resident, and the average annual rate of mortality per 1000 children, during the three years 1875–6–7.

Mortality Statistics of Sixteen Metropolitan Pauper Schools during the three years 1875, '76, '77.

Schools.	Average annual number of resident children.	Deaths in three years.	Average annual rate of mortality per 1000 in three years.
South Metropolitan ...	1552	35	7·5
Central London ...	1275	37	9·7
North Surrey	822	11	4·5
Forest-gate (Whitechapel and Poplar)	646	38	19·6
West London	634	39	20·5
Pancras	503	20	13·2
Brentwood (Hackney and Shoreditch) ...	456	25	18·3
Holborn	440	18	13·6
Strand	395	13	11·0
Bethnal-green	386	8	6·9
Marylebone	361	46	42·4
Lambeth	358	12	11·2
St. George-in-the-East	315	15	15·9
Mile-end Old Town	294	15	17·0
Islington	235	4	5·7
Westminster	135	1	2·5
Aggregate of sixteen Schools	8807	337	12·8

Before referring to the rates of mortality shown in this table, it will be necessary to say something of what we may call the *normal* annual rate of mortality among English children at school ages, which Mr. Edwin Chadwick assumed to be 12 per 1000. By the *normal* rate we mean the rate, according to the English Life Table, among a population at similar ages. School Board ages, as fixed by the Public Education Act of 1870, are three years and under thirteen years; but school ages as generally understood, and as referred to by Mr. Chadwick, are three to fifteen years. The English Life Table shows that in a stationary population the average annual mortality among children aged over three and under fifteen years is equal to 9·8 per 1000, and not 12 per 1000, as stated by Mr. Chadwick. This Life Table was, however, based upon the mortality statistics of the seventeen years 1838–54, and since that period the rate of mortality among English children has considerably declined. The facts for 1877 are not yet available; but in 1875 and 1876 the mortality in England and Wales among children aged between three and fifteen years did not exceed 7·5 and 6·9 per 1000 respectively. In the large purely urban population of the metropolis the death-rate at the same ages was equal to 9·2 per 1000 in 1875, but did not exceed 7·8 in 1876. It will be noticed that each of these actual rates in 1875 and 1876 was below the Life-Table rate at similar ages. It may be urged that the average rate among children neither in England nor London affords a suitable standard for measuring the mortality among the inmates of pauper schools, whose physical standard can scarcely be high. We have, therefore, calculated the annual rate of mortality among children aged between three and fifteen years in East London during the ten years 1861–70, and find that it averaged 11·6 per 1000; this but slightly exceeded the English Life-Table rate among children similarly distributed at the various ages as are the East London children aged between three and fifteen years, which is 10·2 per 1000.

Having thus considered a few of the rates of mortality prevailing, at what have been called the school ages, in different sections of the English population, we are now in a position to consider in greater detail the mortality statistics of the inmates of the metropolitan pauper schools shown in the preceding table. First, as to the ages of the inmates of these schools, which, as we have seen, is an important element in the calculation of rates of mortality. We are again indebted to the Local Government Board for a return showing the age-distribution of more than eight thousand children in the metropolitan pauper schools during the latter part of 1877. It appears from this return that less than 8 per cent. of the inmates of these schools were aged under five years, and less than three per cent. were aged upwards of fifteen years; the remaining 89 per cent. were aged between five and fifteen years, or 41 per cent. between five and ten

years, and 48 per cent. between ten and fifteen years. As nearly 90 per cent. of the inmates of these schools are aged between five and fifteen years, it is important to bear in mind that the life-table rate of mortality at these ages is only 7·4 per 1000 per annum. The *normal* rate of mortality among the inmates of these sixteen schools, calculated with due regard to the proportion living at each year of life, is equal to 8·144 per 1000 of the aggregate number of inmates, instead of 12 per 1000, as stated by Mr. Chadwick, on the assumption that they were aged between three and fifteen years. The age-distribution of the inmates of the various schools varies to some extent, but we shall have reason to refer to these variations when we compare the rates of mortality in the different schools.

It appears from the preceding table that the average number of inmates of the sixteen schools during the three years 1875, '76, '77, was 8807, equal to 26,421 years of life, and that 337 deaths were registered therein during the same period. This is equivalent to an annual death-rate of 12·8 per 1000, instead of 8·1, which is the normal or life-table rate among children at similar ages. This signifies that the 337 deaths recorded in these schools during the three years exceeded by 122, or 57 per cent., the number of deaths that would have been recorded had the rate of mortality not exceeded the normal or life-table rate at similar ages. On account of the small proportion of children aged less than five years among the inmates of these schools, the normal rate is 1·7 per 1000, or nearly 21 per cent. below the normal rate among a population aged between three and fifteen years. If the recorded death-rate in England and Wales between the ages of three and fifteen years, during 1875 and 1876, be reduced in similar proportion, it becomes 6·2 and 5·7 per 1000 respectively, and the rates in London in the same years would be reduced to 7·7 and 6·4 per 1000. With a similar correction the death-rate among the children in East London (including Shoreditch, Bethnal-green, Whitechapel, St. George-in-the-East, Stepney, Mile-end Old Town, Poplar, and Bow) during the ten years 1861-70 did not exceed 9·1 per 1000. The death-rate, therefore, in these sixteen metropolitan pauper schools, which in the three years 1875, '76, '77, averaged 12·8 per 1000, bore most unfavourable comparison with each of these standard rates.

It may be noted that the rate of mortality among the aggregate inmates of these sixteen schools in each of these three years did not vary materially; it was equal to 12·0 in 1875, 13·3 in 1876, and 12·9 in 1877. It may be assumed, therefore, that the excessive rate in the three years was not due to any exceptional causes, but to causes which are in constant operation, and which, all the more urgently, call for investigation. The comparatively small variations in the rate of mortality in these schools from year to year affords, however, satisfactory evidence that the number of the inmates of these schools is sufficiently large to yield trustworthy rates of mortality.

(To be concluded.)

Analytical Records.

DR. E. GERBER'S MILK-FOOD FOR INFANTS AND INVALIDS. PREPARED ONLY IN THUN, SWITZERLAND.

(W. & D. HARVEST, DOWGATE DOCK, LONDON.)

Many new preparations of milk have from time to time appeared in this country, and not a few of them have been noticed in these pages. Dr. Gerber's compound seems to be in all respects satisfactory. Condensed milk is, of course, the basis, but the albuminoids and carbo-hydrates have been judiciously increased, and the result is a food which can be used with safety, as nutritious, palatable, and easy of digestion.

THYMOLINE.

(J. G. SHIRLEY, 2, WESTBOURNE-GROVE, W.)

The antiseptic power of thymol is now well known, and there can be little doubt that for many purposes it will replace the offensive, though cheap, carbolic acid. The preparation now before us is aromatic, and by no means unpleasant in odour. It is well adapted for domestic use, particularly in the sick room.

AROMATIC OZONISER.

(EUGENE RIMMEL, 96, STRAND.)

Fragrant sawdust in which peroxide of hydrogen and aromatic oils can readily be detected is the simplest description we can give of this new and elegant toilet preparation. It is exceedingly pleasant, and possesses real value as a deodoriser and antiseptic, though it is evidently not intended to replace the commoner and more powerful disinfectants. Like the preparation noticed above, its proper place is in the sick room or nursery.

GLYCECOL ROSÆ ET ACID TANNICI.

(H. & T. KIRBY & CO., LONDON.)

Messrs. Kirby's glycecols, or glycerine jellies, are now well known. They are a singularly attractive and convenient form of lozenge, in which a great variety of drugs can be incorporated. The particular glycecol we have now before us is accurately described by its name. It is soft, transparent, and pink in colour, and is not unpleasant, though strongly astringent, in taste.

NITRITE OF AMYL.

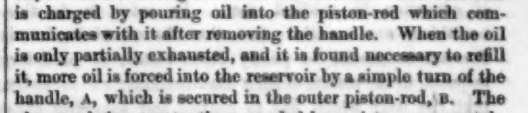
(MR. MARTINDALE, 10, NEW CAVENDISH-STREET.)

Nitrite of amyl is also enclosed in gelatine capsules by Thevenot, but another excellent preparation has been forwarded to us by Mr. Martindale. The liquid is enclosed in glass capsules, each in a small silk bag. In use the capsule is broken, the liquid soaks the silk cover, and can be inhaled most conveniently. The capsules are made to hold one, two, or three drops, and in this respect are much better than the capsules made by others, which contain as a rule too large a quantity of the nitrite of amyl.

New Inventions.

AN IMPROVED HYPODERMIC SYRINGE.

WE have received from Messrs. Arnold and Sons an improved and patent hypodermic syringe, which is represented in the accompanying woodcut. The improvement consists of a reservoir, D, containing oil (in the centre of the plunger); a small piston-rod is inserted inside the ordinary piston, B, and attached to the handle, A, of the syringe, by means of a screw. When the reservoir is once filled with



oil, it will last a long time without renewal. The reservoir is charged by pouring oil into the piston-rod which communicates with it after removing the handle. When the oil is only partially exhausted, and it is found necessary to refill it, more oil is forced into the reservoir by a simple turn of the handle, A, which is secured in the outer piston-rod, B. The plunger, being constantly expanded by moisture, accurately fits the cylinder, thus preventing the possibility of the solution being forced behind the plunger, and ensures the injection of the whole quantity of the solution. The ease with which the self-lubricating plunger works is very evident, and this improvement, for which Her Majesty's letters patent have been granted, can be applied to all syringes, enemas, &c. It should be found very useful, and it is likely that for India, the colonies, and foreign countries, the invention will be invaluable, the instruments possessing it not being able to get out of order, and being always ready for use. Other minor but essential improvements in this syringe consist in the gradations in the barrel (E) being marked in *red*, which is indelible, and in the mounts being screwed on to the glass, thereby rendering it impossible to remove the mount from the cylinder except by breakage. We have tried this little instrument, which is manufactured by Messrs. Arnold and Sons, of West Smithfield, and can testify to the ease and readiness with which it works, one of the chief difficulties in the use of hypodermic syringes having been successfully overcome by the invention.

THE LANCET.

LONDON: SATURDAY, JULY 20, 1878.

THE Government is naturally unwilling to admit the Medical Bill into the list of "innocents" to be slaughtered, but the postponement of the second reading to so late a date as the 25th of July, coupled with the number of adverse notices of motion, may be taken as a confession that the authors of the Bill have abandoned all hope of its becoming an Act in the present session of Parliament. The language of Sir STAFFORD NORTHCOTE on Monday night, in reply to Dr. LUSH'S advice that the Bill should be withdrawn, is not inconsistent with this view of the matter. The Chancellor of the Exchequer said, in his speech on the course of remaining business: "As to the Medical Law Amendment Bill, it would be premature at present to make any statement. It is a matter of great interest, and I prefer taking a little time before deciding what course the Government will adopt in regard to it." Some may construe these words as meaning that the Chancellor still sees hope of being able to proceed with the Bill. But neither the language itself nor the circumstances lead us to such a construction. We should rather gather that Sir STAFFORD NORTHCOTE feels, as he says, that the matter is of great interest—not so much to the profession as to the public,—and that there must be something real and significant in the opposition to the Bill, as to the similar Bill of the previous Government, which requires grave consideration. We hope the result will prove that Sir STAFFORD NORTHCOTE'S words are not merely formal, but expressive of sincere desire to perfect a Bill which may be made to effect beneficially the quality of medical education for the future. It would be difficult to name anything in which the public is more deeply interested than in the creation of an examining board or boards to keep up the minimum standard of education in medical men. In order to do this, two things are essential: first, that the examining boards themselves should be purely disinterested, in pecuniary respects, in the results of their examinations; and secondly, that the body which has to control and supervise these boards—viz., the Medical Council—should be independent, and should possess on the one hand the confidence of the public, as represented by the Crown, and on the other hand the confidence of the profession. It is the misfortune of the Government that, as a matter of courtesy, they have been obliged, in all attempts at legislation on this subject, to ask for, and to be largely guided by, the advice of the boards and bodies needing to be reformed. The present Government is so strong that it perhaps thought it could carry any Bill through the House of Commons. But, however natural such a feeling, it was neither wise nor warranted. The last Government was as strong, and it completely failed. Such measures as the Medical Bill are very different from merely political measures. They appeal to a different set of feelings and interests. They are essentially technical, and should be dealt with in a special way and after a special inquiry.

We venture to hope that Sir STAFFORD NORTHCOTE'S words imply that he perceives this, and is contemplating the reference of the Medical Bills to the consideration of a Select Committee, with power to take evidence. If this be so, we consider that the Government, so far from having reason to be dissatisfied with itself, will be taking a right course, and one which will have the approval of the profession, and of those statesmen who have considered for half an hour the importance of a measure to regulate medical education. Even the loss of time involved in abandoning the Medical Bill for a year will be compensated for by the advantage of taking the evidence of those who have studied the working of the existing bodies which regulate admission to the medical profession. The vacillation of which many complain in the action of the Lord President in regard to this measure was really not so much his fault as the fault of circumstances, and chiefly due to the notion, which he inherited from former Governments, that all that is necessary to rectify faults in the machinery of medical education and examination is to take evidence from those whose faults constitute the very case for legislation. We appeal to the reasonableness of the Lord President to consider whether this is not so. The Medical Council itself declares that its constitution needs to be revised. It says this with much more unanimity than that by which it admitted the necessity for a consolidation of the licensing authorities. And yet, while the Medical Bill provides for the one object, it makes no provision for the other. Some regret what they call the waste of time involved in another session closing without the passing of a Medical Bill. But the time is not wasted. The discussion of this session, and even all the discussion that has taken place since the failure of Lord RIPON'S attempt to legislate, has greatly advanced the public and Parliamentary intelligence on this subject; and if the Government will concede a Select Committee to consider the whole subject involved in the Bill, between its report and the report of the Executive Committee of the Medical Council, they will have proper materials for a measure that rises above the common objects of politics, and greatly affects the welfare of the people.

PUBLIC and professional attention has, during the last few months, been prominently directed to the many responsibilities which attach to those who have the care of the insane. We have seen a man unquestionably guilty of the very grave offence of firing at a judge in the streets acquitted on the ground of insanity, without the production of a particle of medical evidence as to his mental condition. After this legal *gaucherie*, we have heard of informal visits to the prisoner by medical men said to be permitted, rather than empowered, to examine and report on his state. The Home Secretary has repudiated the idea that he sought counsel of outsiders, and announced his intention of being guided in his decision with respect to the destiny of this man by the reports of those "officially" responsible for his care in a public asylum. Finally, to the surprise of everybody, we have been told in the newspapers that the friends of the alleged lunatic are informed that if a certain sum of money is forthcoming, as a guarantee, he will be discharged from custody. It is impossible to believe the real facts have transpired. That a person guilty of so serious a crime against public

order, if not personal safety, as firing at a judge in the streets, whether the intent was to injure, or only to frighten him, should escape punishment by being falsely described as insane, is inconceivable. It is not, however, to this phase of the subject we are at the moment concerned to point, but to the unfortunate way in which the responsibility of deciding upon the sanity or insanity of the prisoner has been cast upon the "officials" who are charged with his care. This is a method of procedure wholly opposed to that adopted in the case of ordinary lunatics, who cannot be confined in an asylum upon the authority of the medical officers of the institution. It will be replied that DODWELL was not incarcerated on the certificate of Mr. GIBSON, of Newgate, or Dr. ORANGE, of Broadmoor. These gentlemen were, however, the first, and only, medical authorities to examine the alleged lunatic, and the law expressly requires at least one independent medical certificate in the case of every person confined as a lunatic. We contend, therefore, that the spirit, if not the letter, of the law relating to lunatics was broken by the imprisonment of DODWELL. We have been jealously careful not to comment hastily or strongly on this case, in deference to the difficulty obviously created by the mismanagement of the proceedings in court. It is, however, necessary to protest that the responsibility must not be wholly cast on the medical officers of Newgate, Broadmoor, and Millbank. Public opinion will not be less scandalised than professional opinion has been, by the bungling conduct of the case throughout, if it be allowed to go out to the world that the fate of a man acquitted on the plea of lunacy without medical evidence is left to be determined by the officials of the Government prisons and asylums; and, strangest circumstance of this imbroglio, that the destiny of this lunatic, or subject of a propitious blunder (whichever he may be), is now dependent on the accident of his friends being able to raise a sufficient sum of money as a guarantee. What is it this money is to assure? If the man is not insane, the Government has no right to propose his liberation on surety. Unless it is Her Majesty's pleasure to confine a *sane* person in a lunatic asylum, DODWELL, however worthy of punishment, must (supposing him to be sane) be allowed to leave Broadmoor with full control of his person and property; and if he is not sane he cannot leave at all. There is no middle course. It is easy to see how heavy must be the responsibility of the medical officers who are required to certify that he is sane. We offer no opinion as to the mental state of the prisoner, as we have no means of judging. Nothing has transpired to supply the basis of a professional judgment. Meanwhile it is obvious the position in which the matter now stands is unfortunate, and, on public grounds, unsatisfactory.

Again attention has been called to the responsibility incurred by medical men who receive into their households patients who are not under certificate. We revert to this subject in response to an appeal which has been made to us on behalf of the very large number of medical practitioners who have a "single patient" under their care, and who are thrown into some doubt as to their legal position. No licence, *for the premises*, is required in the case of a single patient; but no "lunatic" can be lawfully received without certificate, and when received with certificate notice should be sent without delay to the Commissioners in Lunacy, unless an order has been issued by a Master in Chancery, in which case the patient will be under the protection of the Court, and of that most useful body, the board of Lord Chancellor's Visitors of Lunatics. It is perilous in the extreme to receive a certified lunatic without giving notice to the authorities; and it is equally full of risk to receive a patient, who may be described as insane, without certificate. There is reason to fear that this last practice is far too common. Friends have, for a variety of reasons, a great objection to place weak-minded but not violent persons under certificate. The trouble and expense entailed by that procedure are very considerable, and the strongest inducements are held out to avoid taking the step. It is under some wrong impression medical men are induced to waive the supposed "formality." Many incur the risk in ignorance, possibly misled by the fact that no licence for the house is required when only one patient is to be received—a strangely anomalous omission in the law. Others rely on the supposed efficacy of a certificate of discharge from some asylum to give prolonged protection, whereas perhaps the patient has relapsed and ought again to be placed under certificate. Some—let us hope a few only—are persuaded to accept the danger and responsibility to oblige their clients. For the warning of the last-mentioned class of offenders the recent case at Datchet will be useful. There are, however, cases in respect to which reasonable doubt exists, and it would be well if the uncertainty could be removed. Obviously the authorities are not anxious to multiply grounds upon which a patient must be certified. It is clearly recognised that there are cases of "nervous" disease requiring medical supervision, which are not to be classed as insane. It is not easy to draw the line where *nervousness* ends and insanity begins. Sometimes aged and even younger persons with excitable temperaments and eccentric habits have strange fancies. They take strong likes and dislikes; they conceive the most extravagant notions of those around them, and of occurrences. Do these mental phenomena constitute madness? If they do, then a very large proportion of the so-called "nervous" and "weak-minded" patients now received by medical men without certificates ought to be certified. We are strongly inclined to the opinion that this is the fact; and we venture to urge that in any and every case of doubt, a joint communication should be addressed to the Commissioners in Lunacy, by the friends and the medical man in charge of such cases, stating the facts, and asking counsel. We have no desire to burden the Commissioners, who are already severely taxed by work and responsibility, but it is important, in the interests of the public, and a large section of the medical profession, that a line of distinction between insane and nervous patients should be at least roughly traced. The communications we have received show beyond question that much doubt prevails; and as the Commissioners are, we believe wisely, beginning to take strong action in the matter, it would be only fair, and a timely and kindly procedure, to issue an order which will not only define the responsibility, but, coming promptly after the recent case, lead to necessary reforms.

Another serious matter in connexion with this subject, to which attention is, at the present moment, painfully attracted, is the responsibility which arises out of the employ-

ment of attendants to whom the personal care of the insane is unavoidably entrusted. The deplorable case at Gloucester, now *sub judice*, has been commented upon in the daily press with scant recognition of the embarrassing position in which medical superintendents, whether of public or private asylums, are placed. The custody of patients must be confided to their attendants, and these not unfrequently abuse the trust. It is the not uncommon experience of medical men in official charge of lunatics that the task of controlling the attendants is more onerous and difficult than that of supervising their patients. Unfortunately the difficulty is not lessened as time goes on. The "experienced" attendant is even less to be trusted than the unlearned—in asylum arts and practices. Many of the most expert and successful of superintendents are unwilling to employ men and women who come armed with testimonials of service. They prefer to train their servants themselves. Perhaps one of the most useful measures of precaution which could be taken is that suggested by common sense, and which we have so often advocated in these columns—namely, that the employment and dismissal of attendants should be left entirely to the physicians. The interference of a committee in this matter is wholly unreasonable. The attendants of an asylum are the agents of the medical treatment; they, so to say, represent the drugs and appliances by which the mental malady is to be cured or relieved. The medical man should be left as completely unfettered in his choice and use or dismissal of a particular attendant as in the adoption or abandonment of a special medicament. When this principle comes to be recognised in asylum management, responsibility will be better defined, and, we venture to think, "accidents" and "offences"—generally convertible descriptions of the *unfortunate*—will be less frequent. The care of the insane is, under every aspect, a highly responsible function, and nothing will more conduce to its satisfactory discharge than a full and sharp definition of personal power and duty.

AMONG the congenital malformations which excite the surprise of those ignorant of teratological facts, and arouse the especial interest of the evolutionist, is the occurrence of supernumerary mammæ and nipples, so that instead of the usual sufficient and even superfluous complement, three or even four distinct and separate structures are found. In all ages they have attracted notice, and lately in this country Dr. SNEDDON, and abroad M. BARTELS and Professor LEICHTENSTERN, have directed attention to them. The work of the latter, which appears in VIRCHOW'S *Archiv*, is especially comprehensive, being based on the particulars of thirteen cases which have come under his own observation, and ninety-two which he has found recorded in medical literature. The object for which he has compared them is especially to ascertain the frequency of the occurrence of this anomaly, its most common form and its associations—points on which the statements in medical literature vary much. This knowledge is essential if we would obtain an answer to the further question of the origin of the anomaly, whether it is to be regarded as *bizarre* and accidental, or as the result of some impeded or excessive developmental effort.

It is commonly asserted that extra rudimentary breasts or nipples are occurrences of considerable rarity in women, and of far greater rarity in men. LEICHTENSTERN, however, having been on the look out for the condition, is inclined to attribute the supposed rarity rather to the absence of observation than to the infrequency of the malformation, and his experience leads to the conclusion that cases of rudimentary nipples (polythelia), with or without additional glands (polymastia), occur pretty frequently in both sexes, and at least as frequently in men as in women. He believes that the frequency should be estimated at about one in five hundred, and that a very large number of instances might readily be collected if those who inspect large numbers of men, such as military surgeons, had their attention directed to it. Many supernumerary nipples are mistaken for nævi or spots of molluscum. In women it has often happened that the real nature of such a spot was discovered only when pregnancy caused it to assume a functional activity. The circumstance that in women attention is thus attracted to the anomaly, while in men it passes unnoticed, is probably the reason why its occurrence has been noted so much more frequently in women than in men (in the proportion of seven to two). The cases which have come under LEICHTENSTERN'S own notice corroborate this view, for nine of them were in men, and four in women.

In the great majority of cases (91 per cent.) the additional nipples were situated on the anterior aspect of the thorax. In extremely rare cases they have been met with in the axilla, on the back, over the acromion, and on the outer side of the thigh. The frequency with which they are met with in these irregular situations has been much exaggerated, and in consequence DARWIN concluded that but little weight could be attached to them as evidence of atavism. When found on the anterior aspect of the thorax, they are placed in most cases (94 per cent.) beneath the normal mammillæ, between them and the edge of the ribs. Sometimes the malformation is unilateral, sometimes bilateral, and in the latter case the additional organs are arranged symmetrically or unsymmetrically. In rare cases, the appendages occur above the normal nipples, and then, without exception, are placed outside the normal nipple-line. In two cases only were the extra nipples situated in the middle line of the body. When the addition is unilateral it is much more frequently on the left than on the right side, in the proportion of seven to two. Why this should be is not clear, but it is worth remembering that the normal breast on the left side is more developed, on the average, than that on the right side. This was associated by HYRTL with the circumstance that the left breast is more used than the right, on account of the facility with which a child can be held upon the left arm, and the right remain free; but this explanation is doubted by LEICHTENSTERN on the ground that the same preponderance of the left side is to be noted in young persons, and because when one breast is absent, or small, it is almost always the right breast which thus suffers. KLEBS associates this lateral relation with the rotation to the left of the anterior segment of the fœtus in the amniotic investment, and points out that congenital defects in the lung are more frequent on the left than on the right side. The congenital absence of one breast occurs in cases of congenital defective formation of one half of the thoracic wall, muscular or osseous. On the other

hand, however, the presence of supernumerary mammæ has never been seen in conjunction with thoracic defect.

Very different statements have been made regarding the hereditary transmission of this anomaly. In the immense majority of cases certainly no such transmission can be traced. Occasionally, however, it appears indubitable. In this respect the condition resembles some other congenital anomalies.

It has been said that in the lower animals the number of mammæ diminishes according to the developmental grade of the animal possessing them; but this, which has been enunciated as a law, is of but partial application, and does not obtain when different sorts of animals are compared. What is, however, of perhaps greater significance in regard to the question under consideration is that in each order considerable individual variations are observed. In the dog, for instance, the number of teats varies, under normal circumstances, from seven to ten. CUVIER enunciated the law, which is no doubt accurate, that the greater the variation in the number of breasts in the same species, the larger is the number normally possessed. The latter is commonly proportioned to the number of young borne by the animal; most of those with two breasts—such as the apes, the solipeds, the Cetacea, and the Edentata—having, as a rule, only one young at a time. In the same tribe as the Pachydermata, species with two breasts—such as the elephant, hippopotamus, and tapir—have only one young at a time; while the sow, with ten breasts, bears from eight to ten young. A popular idea has long obtained in Germany, and has been shared even by medical men, that women with accessory breasts are disposed to twin conception. The polymastia was regarded as an indication of a more highly developed generative system, just as the imperfect development of the breasts may accompany the imperfect development of the uterus. In the last century the question was asked, first of Professor SOCIN of Basle, and then of the Medical Faculty in Tubingen, whether a certain woman in Basle who possessed four breasts might marry without incurring great risk of bearing twins. The answer was that she might, and the result justified the conclusion. In the cases collected by LEICHTENSTEIN, among seventy women with polymastia there occurred only three twin conceptions.

Glandular structure commonly exists, and the additional breasts may, in very rare instances, be employed for suckling a child. In most cases, however, they are useless for this purpose, and frequently, when the infant is put to one breast, from the other upon the same side milk flows. The symmetrical and regular situation of the accessory mammæ in the human subject is very similar to the position of those of animals which naturally possess more than one pair. Even the axillary position has its analogies in some animals. It is noticeable, however, that the accessory nipples often present a very embryonal character, and possess still the furrow by which the development of all nipples commences. These facts incline LEICHTENSTERN to the opinion of DARWIN, that the accessory breasts and nipples are really a reversion to distant primitive ancestors, and announce the existence in man of a latent developmental tendency to the production of more than two breasts, and these observations show that such an event occurs less rarely than has been supposed. The irregularity in position of these accessory organs might be a difficulty in regarding them in the light of a reversion to an earlier type; but, as LEICHTENSTERN has shown, this irregularity is much less than has been hitherto supposed.

TARDILY, reluctantly, but at last effectually, the Committee of Council of the British Medical Association have undertaken the consideration of the admission of women to the membership of the Association, and of the attendance at the general and other meetings of the women already members. Mr. BOSANQUET, of the Oxford Circuit, and Mr. J. P. BENJAMIN, Q.C., were requested to confer and advise upon the rights of female members of the Association, and on the powers of the Association with regard to them and other women who might hereafter be desirous of becoming members. Both these gentlemen are of opinion that Mrs. GARRETT-ANDERSON is a member of the incorporated Association, having been elected a member of the old unincorporated Association, and having signed the agreement mentioned in the fourth Article of Association. Mrs. HOGGAN, on the other hand, having been elected after the incorporation of the Association, at a period when no election could be legally made, is not now a member of the Association, and can only become so if duly qualified. The reasoning of the learned gentlemen in this matter is as follows. The fifth of the Articles of Association is the only one which provides for persons who were not members of the old unincorporated Association becoming members of the incorporated Association; and that article provides that the terms and conditions upon which such persons are to become members shall be prescribed by the Association in general meeting. The bye-laws were not, however, made till the 3rd of August, 1875, and as no provision for the election of members existed before that date, all elections between the time of incorporation and the adoption of the bye-laws were void. In order to remedy the difficulty thus raised, power may now be given by the Association at a general meeting to the Committee of Council to elect, or declare elected, any of the persons who were elected between the incorporation of the Association and August 3rd, 1875, but whose election was invalid on account of there being no provision then in existence for the election of members. The sub-committee appointed to consider the question of female members have recommended that proper notice of motion should be given, enabling the Committee of Council to declare elected those *male* persons who were intended to be elected during the above-named period. Any member who may desire to retain the companionship of women in the Association may of course, if he think fit, move an amendment to this resolution, at the annual meeting, to the effect that Mrs. HOGGAN should also be declared elected. There is, however, little likelihood of such an amendment being carried. On the contrary, the the line should not be drawn there. Bye-law No. 3 legalises the arbitrary expulsion of any member without reason or cause assigned, and under this bye-law the Association has the power to expel Mrs. GARRETT-ANDERSON. The terms of the bye-law are: "Any member may be expelled from the Association by a resolution of the Committee of Council, if carried by three-fourths of the members present, subject to confirmation by the next ensuing annual meeting, and he

shall thereupon cease to be a member, and shall not be eligible for re-election. One month's notice shall be given to any member affected thereby." In consequence of this last proviso, the bye-law cannot be put in force this year, as the legal notice cannot be given. Beyond this, it seems, nothing can be done to prevent female members attending the meetings of the Association, and taking part in the discussions thereat, without contravening the Memorandum of Association, which the Companies Acts do not allow to be altered.

The exclusion of women from membership of the Association in future will be secured by an alteration of the fifth of the Articles of Association, by inserting before "person" the word "male." The branches of the Association (the metropolitan branch elected Mrs. GARRETT-ANDERSON) will be prohibited from electing female members of the Association by the following addition to Bye-law No. 1: "Provided that the power of such Branch Council shall only extend to the election of male persons."

DURING the past week our daily journals have been busily engaged, among other things, in telling the British public "all about" Cyprus, and anxious questions have been asked in Parliament. Mr. BARING is there already as Her Majesty's civil representative, and Sir GARNET WOLSELEY is on his way thither with a staff of officers, all of whom are specially picked men. Judging from the information afforded us up to the present time, it would appear that the materials out of which to hew the history of Cyprus are singularly scanty. It is the easternmost island of the Mediterranean, and may be said to command, in some sort of way, the southern coasts of Asia Minor, and also those of Egypt, and so can be utilised as a "house of call" in going to either of these countries. The island is about one hundred and fifty miles long, has a width varying from fifteen to forty miles, possesses five or six important towns, and a total estimated population of 200,000 persons. The products of Cyprus are cotton, wine, silk, and fruits, and (in spite of what has been recently written to the contrary) there are in the mountain ranges large forests of very good timber.

We are unable at present to place on record reliable details as to the climatic or sanitary aspects of the island; but it appears, naturally enough, to be generally similar to the countries adjacent. Very hot summers and intensely cold winters prevail. The soil is chalky, sunstroke is by no means uncommon, and the burning winds of Africa sometimes visit it. Water is scarce, for there is but one river worthy of the name, and in summer the mountain torrents are usually dried up. Animal food is said to be poor in quality; butter is scarce; bread and vegetables are plentiful, good, and cheap; and, in common with all places on or surrounding the Mediterranean, fruit is abundant, and there is great variety. Cyprus has, however, its malarious localities; leprosy is reported to be common; and cases of elephantiasis are seen occasionally. All records (but these appear to be eminently hazy in character) seem to agree that, in common with Constantinople, Smyrna, and most other Levantine places where many people congregate, materials for the manufacture and perpetuation of the continued fevers exist in great abundance and variety, and have been fostered up to the present time by the *dolce far niente* mode of government peculiar to the Turk. Hence, even under the judicious and energetic supervision of Sir ANTHONY HOME (just appointed principal medical officer on Sir GARNET WOLSELEY'S staff), we must expect, in the earlier days of occupation, some sickness in our little army of a kind similar to that which occurred at Varna, Bourgas, and other places on the Black Sea during the first months of the Crimean War. With the scanty knowledge now in our possession, we may class the climate of Cyprus as neither better nor worse than that of other Mediterranean districts. The scarcity of water is a serious evil, and this, with other insanitary conditions, will give the medical officer and his colleagues plenty of work to do for some time. But Cyprus has, in hygienic aspects, many manifest advantages over Malta. It is larger, the population is, comparatively speaking, scanty, and it is incomparably more fertile. If, as may be reasonably conjectured, our term of occupation is likely to be of long duration, there can be no doubt as to the importance of organising, deliberately and carefully, a systematic set of sanitary measures, an important item in which would be what is popularly known as quarantine. The annexation of Fiji was followed by an unhappy illustration of the mischief that may ensue if preventive measures afloat are not carefully administered and properly attended to, and our readers hardly need to be reminded that the geographical position of Cyprus (taken with the fact of our occupation of the island) is superlatively important in connexion with the transmission of well-known diseases that the East sends to the West free of duty. The experiences of Sir ANTHONY, not only at Ashanti and elsewhere, but on Mr. SIMON'S staff at Whitehall, will stand him in good stead on this occasion. But we believe that the Government will, as things progress, probably find it advisable to strengthen the medical staff in sanitary work by sending out one or more men of the "health officer" type, whose duties will of course be wholly preventive and civilian in character. Meanwhile, no better man in the army than Sir A. HOME could possibly have been chosen for a post the responsibilities connected with which are of a very grave and important character. For an opportunity will most assuredly occur at Cyprus to test the comparative merits of the antiquated and cruel system called "quarantine" and the plan now adopted in this country called "sanitary supervision afloat."

Annotations.

"Ne quid nimis."

SCOTCH FEELING AND THE BILL.

WE thought that the resolutions passed by the Glasgow and West of Scotland Branch of the British Medical Association did not really represent the feeling of the profession on the questions raised by the Medical Bills, and expressed a hope that Scotland would yet take a more impartial view of them. Our hope is already partially fulfilled. The Scottish Midland and Western Medical Association have, at a recent meeting, to which members of the profession at large were invited, passed the following resolution unanimously, moved by Dr. Fairless, seconded by Dr. Cardwell:—"That this meeting petition in favour of the Lord President's Bill, and of the addition of a clause providing for the direct representation of all registered practitioners in the General Medi-

cal Council, and that a petition embodying the foregoing resolution be presented to Parliament." The institution of a One-Portal System, and a change in the constitution of the Council are the two great points in medical reform, and we have them advocated here at a meeting representative of an important district of Scotland. Dr. Eben. Watson was more thorough-going in his proposals for reforming the Medical Council than ourselves. He suggested that it would simplify the direct representation of the profession altogether if the Corporations were not represented at all.

METALLO-THERAPEUTICS.

THERE is no abatement abroad of interest in the subject of "metallo-therapeutics," and enthusiastic scientists are continually taking up the matter and producing wonderful results, which, it must be confessed, do not seem to be the clumsy conjuring that some think them. Whatever opinion may be held as to the meaning of these effects of metallic applications, it is of prime importance to note that their study is not undertaken by clever charlatans, but by men of known powers of observation. One of the most recent accounts of the effects of metallic therapeutics is that of M. Abadie in a short paper on Hysterical Amblyopia (*Prog. Méd.*, July 13th). He points out that many cases of so-called "congenital amblyopia," when vision is not wholly abolished, when the failure is chiefly in the centre of the field, and when the duration of the amblyopia may be almost indefinite, depend on anomalies of refraction, others on congenital defect in the optic nerve, whilst others are probably more strictly of the hysterical type. He further points out that hysterical amblyopia is not always associated with prominent hemianæsthesia nor with the pronounced symptoms of grave hysteria, but is often almost the only functional derangement present. Three cases of so-called congenital amblyopia which he had recently seen proved to belong to the hysterical category; they were associated with some hemianæsthesia, the loss of sensibility being limited to the side of the amblyopia (which is almost invariably unilateral). Application of gold to the temporal region of the amblyopic side not only increased the acuteness of vision, but was accompanied by a diminution in that of the unaffected eye. A similar transference of sensation was observed with regard to the cutaneous sensibility. It is a phenomenon first pointed out by Charcot, and is one of the most remarkable facts in the observations of these cases.

Besides unilateral amblyopia with hemianæsthesia there are other ocular nerve disorders traceable to hysteria, and, according to M. Abadie, amenable also to metallic applications. The frequent complaint of women that they cannot look at any object for any time without suffering severe pain in the head, and photophobia, and the constant burning and pricking sensation experienced in the conjunctiva and eyelids without any change being noted in the fundus and without any anomaly of refraction, belong to a class of functional visual derangements, which has been variously said to depend on asthenopia of accommodation or upon retinal hyperæsthesia. Förster, of Breslau, has recently studied these cases, and styles them hysterical kopiopia, and shows that they are usually associated with some slight uterine disorder. In such cases menstruation is deranged, abdominal pains are complained of; but the chief trouble is that produced by reflex phenomena, which far outweigh the local disturbing cause in their effect on the patient. Many young women are wholly unable to read, write, or sew in consequence of the troublesome functional derangement of their visual organs. The treatment for these cases of "uterine kopiopia" consists in measures for the uterine affection itself, hydrotherapy and bromide of potassium, and in some cases "metallo-therapy." M. Abadie has found that in cases of this class which are truly hysterical the effect of metallic applications is very striking. Thus there are cases in which continuous headache, neuralgia increased by the least work, and not yielding to quinine, have been cured by the simple means of application of a metal. Gold is the first metal to be tried. "Three twenty-franc pieces" are tied on to the forehead, and kept there during the night. If relief comes with the morning, then the metal is administered internally in the form of the chloride, at a dose of about a centigramme. Should gold fail, then copper, zinc, or combinations of metals are tried until eventually a cure is effected. An illustrative case is given, and with an abstract of this we may leave, for the present, the subject of metallic medicine. The patient was a young lady, twenty-five years of age, who for nearly a year had suffered from asthenopia, inability to view near objects without severe pains in the head, photophobia, and transitory œdema of eyelids in the morning. The eyes were perfectly normal in every respect. Tonics, baths, and bromide of potassium produced no effect, and at the end of two months M. Abadie saw the patient again. He then learnt that she suffered from abdominal pain at the catamenial periods, when also the ocular disorder was most marked. There was no anæsthesia nor amblyopia, yet he thought it well, after the failure of other remedies, to have recourse to the metallic treatment. He applied gold externally and administered it internally. The latter mode of exhibition provoked gastric disorder, and, no relief ensuing at the end of a month, copper was had recourse to. The day following the application of copper the photophobia had disappeared and the œdema of the eyelids did not develop, and the patient thought herself so well at the end of a month as not to require any more of the treatment. It was left off, and the symptoms returned. She herself had recourse to the cupric treatment, but this time no good resulted. Finally, M. Abadie effected a rapid and complete cure by applying a combination of copper and zinc externally in the form of two thin plates of these metals.

It is evident that metallic medicine is not yet a thing of the past, for the same number of the journal containing this communication states also that MM. Charcot and Regnard contributed to the Société de Biologie a paper on the subject with reference to hysterial hemianæsthesia; and the journal itself promises to discuss the matter again shortly. Whatever the explanation, the subject is not one to be passed over in silence.

SANITARY ETHICS AT SHEFFIELD.

THE administration as well as the organisation of the Public Health Act at Sheffield is, at the present time, in a superlatively unsatisfactory state. The corporation, as sanitary authority of the town, advertised for and appointed, in 1873, a medical officer of health for a term of three years. Twelve months after the appointment of this officer the inspector of nuisances resigned, and the medical officer of health offered to perform, in addition to his own duties, those of the inspector of nuisances. In 1876 and 1877 the double appointment was renewed, but in the current year several administrative questions were raised, the practical result of which is that the health officer is not recommended for re-election, and a notice is issued, advertising for an officer at a salary of £300 per annum, or half the sum given to the present occupier of the post. During the past few days we have received "A Plain Statement of Facts" addressed by Dr. Griffiths to his fellow-townsmen of Sheffield, but apparently printed for private circulation only, and we may fairly suppose that those specially interested in the question will have had an opportunity of reading a copy before these remarks appear. The sum of the matter appears to be this—(1) That Dr. Griffiths at the commencement of work, did not exercise a sound discretion in offering to do the

work of an inspector of nuisances as well as that of health officer, and so putting himself in a distinctly false position with his Committee; (2) that this line of action has been made a peg whereon to hang a scheme of cheap sanitary work, the health officer himself being, *nolens volens*, quoted as the father of it. Petty charges about irregularities in office work are brought against Dr. Griffiths by some of the Committee, which, viewed in any aspect, are totally unworthy of notice, except as exhibiting the parsimonious way in which sanitary work appears to be conducted at Sheffield. For if the office had possessed a properly qualified clerk, no kind of foundation for these petty charges could, as we take it, have existed. To outsiders, however, these charges again are the peg whereon the health officer is compelled to hang his resignation. The affair is, in the interests of public and profession alike, most unfortunate, and furnishes, unhappily, a conspicuous warning to those very able, but ultra-energetic men, who try to combine the work of two persons whose functions are as dissimilar as those of the colonel commanding a regiment and one of his sergeants. But this want of discretion by no means nullifies or neutralises the undeniable fact (reported in THE LANCET a fortnight ago) that since the present medical officer of health has held office, the mortality of Sheffield has declined steadily and progressively. There are other circumstances recorded in the annual report of an equally favourable character, all going to prove that the people of Sheffield are losing (and others will doubtless soon be gaining) the services of a highly-skilled and specially well-qualified medical officer of health, whose sole official sin appears to be excess of energy—a very venial sin after all.

TREATMENT OF NASO-PHARYNGEAL POLYPI.

IN a pamphlet devoted to this subject by Dr. D. Juan Creus y Manso, of Madrid, he gives the details of the symptoms and treatment of a formidable case of naso-pharyngeal polypus, in which he performed ablation of the upper jaw. The hæmorrhage appears to have been unusually great, and the case terminated fatally on the eighth day. He takes the opportunity of reviewing the treatment of these cases, and the conclusions at which he arrives are:—1. That the so-called naso-pharyngeal polypi, which grow from the base of the cranium, are in reality fibromas, and ought so to be called. 2. They not only invade the pharyngeal and nasal cavities, but they may make their way into other adjoining cavities, through the apertures normally existing, into which they penetrate after the fashion of a wedge. 3. They produce very serious hæmorrhages and symptoms depending on their increase of volume, leading to disturbance of important functions. 4. The cavity of the cranium itself is not free from their attacks, and after making their way through the bony walls, they may occasion immense losses of substance, without revealing their presence by any active symptoms. 5. It has not been shown that they cease to increase as the patients pass from youth to adult age, though they are most common in youth. 6. When the increase in size of the tumour, and the hæmorrhage or other symptoms, threaten the life of the patient, if there be no evidence that it has penetrated the cranium its removal is indicated. 7. Palliative operations are useless, and at the same time serious, since they have to be repeated on account of new growth of the tumour. Their radical extirpation is sometimes followed by successful results. 8. Although it has not been shown that any operative procedure will prevent relapses, the radical cure should fulfil two objects: first, to destroy the tumour; and, secondly, to leave an opening sufficiently large to enable any recurrence of the tumour to be immediately attacked by some destructive agent. 9. All forms of ligature or cauterisation are ineffective; excision is difficult and accompanied by severe hæmorrhage; avulsion difficult and incomplete; electrolysis is also imperfect and incomplete. 10. These tumours cannot be attacked by the natural orifices, but Nélaton's or the palatine plan may be of service when there are no extensive ramifications. 11. Resection of the maxilla, although it causes an irreparable loss of substance, is necessary in complicated cases, and is not in itself a serious operation. 12. The floor of the orbit and eye should be preserved if possible, as well as the anterior face of the resected portion of bone. The cutting-pliers are preferable to the chain-saw in the greater number of cases, because it can be applied more rapidly, and the cut is clean. Lastly, the so-called osteo-plastic resections do not satisfy the second desideratum of the radical cure.

THE VIVISECTION RETURN.

A PARLIAMENTARY paper has just been issued at the request of Mr. Mundella, showing the number of licences and certificates granted during the past year. In England and Scotland 20, and in Ireland 8 licences have been granted; 2 of the places registered for vivisection which were in the return issued in 1877 have ceased to be on the register. In addition to the licence, certificates must be obtained by the licensee for special purposes, and they are thus arranged in the return:—For experiments in illustration to lectures, 11; for experiments without anæsthetics, 7; dispensing with the obligation to kill the animal before recovery from anæsthetics, 12; permitting experiments on cats, dogs, horses, mules, or asses, 6; for further advancement of knowledge by testing previous discoveries, 2; experiments in which "curare" has been employed, 0. In Ireland the only certificates which have been issued are 3 for dispensing with the obligation to kill the animal before recovery from anæsthetics, so that the amount of physiological research, small enough in England and Scotland, has been almost *nil* in Ireland. Considering that only six of the larger animals have been used during the past year—viz., 2 in Edinburgh, 3 in London, and 1 in Manchester, we must conclude that this Act has almost stopped advance in experimental physiological and pathological science in this country. The return will surely convince Mr. Mundella that two or three days spent by himself and his friends in the amusement of fishing will cause more pain and suffering than all our physiologists have inflicted during the past year. But the one is for sport and must be held sacred, whilst the other is for the verification and advancement of knowledge, and the discovery of means for alleviating or curing disease, and hence must be regulated and practically proscribed!

THE SANITARY STATE OF ERZEROUM.

WE learn that the work of the sanitary detachment under the charge of Dr. Reitlinger, which had been appointed, on the occupation of Erzeroum by the Russian army, to place the Turkish cemeteries of that city in order, has been brought to a conclusion. Not less than 14,000 corpses, it is stated, had been placed in these cemeteries during the war. Interred can scarcely be said; for many of the corpses were barely covered with earth, and as decomposition advanced, the cemeteries became so abominably offensive as to excite the gravest alarm for the health of the inhabitants of the parts of the city in their neighbourhood. Indeed, the fatal epidemic fever which prevailed in Erzeroum is assigned in part to this cause. The sanitary detachment at once entered upon its duty, and within the space of a month it has succeeded in covering the whole of the cemeteries with a thick bed of earth, deposited in four layers. As the work proceeded the nuisance from the cemeteries diminished, and with its completion the nuisance has disappeared. Moreover, sickness in the city has fallen to a minimum. After the completion

of the work of the sanitary detachment, a formal inspection was made of the cemeteries, the foreign representatives in the city being present, and a state of propriety was found there as novel as it was pleasing, and which elicited the highest encomiums on the result of the labours of Dr. Reitlinger and his staff.

Further information enables us to state that typhus has become rare in the city, and that of the 4600 sick left there by the Turks, only 62 remained, at the time of this report, in hospital—for the most part soldiers whose limbs had to be amputated for frost-bite.

INFANTILE DIARRHŒA IN LEICESTER.

THE high temperature during the last week of June caused a general and marked increase in the mortality from diarrhœa in most of the large English towns, which the moderate temperature of the first two weeks of July does not appear to have checked. The deaths referred to diarrhœa in twenty of the largest English towns, which had been but 54 and 53 in the two weeks ending 15th and 22nd June, rose to 133, 269, and 433 respectively in the three following weeks. During the three weeks ending 13th inst. the annual death-rate from this disease in the twenty towns was successively equal to 1·0, 1·9, and 3·1 per 1000. The returns for the different towns, however, exhibit the usual marked variations, and Leicester again shows the conspicuous excess of diarrhœa fatality which has been so much commented upon in recent years. During the week ending 13th inst. the death-rate from diarrhœa, which averaged 3·1 in the twenty towns, ranged from 0·3 in Bristol to 4·2 in Manchester, 5·8 in Hull, and 12·0 in Leicester. The fatal cases of diarrhœa in Leicester, which were but 8 during the twelve weeks ending June 22nd, rose successively to 6, 20, and 28 in the three following weeks ending the 13th instant. This annually recurring excessive fatality of infantile diarrhœa in Leicester has lost its novelty, but it is not on this account less a duty again and again to call attention to this preventable loss of infant life. During the eight years 1870–7 infant mortality in Leicester, measured by the proportion of deaths under one year to births, averaged 221 per 1000, and exceeded the rate in any other large English town, Liverpool alone excepted. This exceptional infant mortality in Leicester, where the death-rates among adults is low, casts a serious imputation upon those responsible for the care of infant life within the borough.

SPINA BIFIDA.

PROFESSOR RANKE, of Munich, has published an interesting contribution to our knowledge of the origin of this affection, based upon five cases, of which four died. In all the lumbar region was the seat of the malformation, and in no case was there any complication of hydrocephalus or hydrorachis. One case was punctured four times, and was remarkable from the circumstance that the child, after each operation, fell into a deep sleep; it is conjectured in consequence of the diminution of the intracranial pressure. The cerebro-spinal fluid was very rapidly re-formed, in the course of a few hours on each occasion; and from this it is assumed that the arachnoid, from which the fluid is supposed to come, must be a secreting organ of considerable energy, its action being probably produced by the diminution of intracranial and intervertebral pressure consequent on the paracentesis. The anatomical appearances in the fatal cases were as follows. In the three cases in which the sac was covered by normal skin the spinal cord was united with the wall of the sac, and extended as far as the lower sacral vertebræ, being thus considerably lengthened. From the place of adhesion the roots of the sacral and lumbar nerves were seen to *ascend* to their respective intervertebral ganglia. It is conjectured that the spinal cord, during the early period of fœtal development, while it occupied the whole length of the canal, became adherent to the skin, and was thus retained in its lowest position. The intervertebral pressure gradually bulged and stretched the skin, carrying with it the spinal cord; and this dislocation of the cord prevented the closure of the vertebral arches at the spot. The patency of the vertebral arches is thus regarded as the consequence of the original morbid condition. This idea was suggested by Morgagni, and advocated by Cruveilhier, although a very different opinion has been attributed to the latter in Germany, and even in France, in consequence of an erroneous statement by Virchow.

In one of Ranke's cases there was no cutaneous sac, but an area four centimetres long and two wide was occupied by a reddish granular membrane, evidently the spinal dura mater. He regards the absence of the skin as a secondary effect, and the origin of this form the same as that of the others.

VALUE OF MEDICAL CERTIFICATES.

A CURIOUS case is reported in the *Sheffield Evening Star*, in which Dr. Mason, of Sheffield, sought to recover from Thomas Boyle, silversmith, the sum of one guinea, for giving a certificate as to the cause of death of defendant's wife. We are not informed of the exact nature or purpose of the certificate; but the curious part of the case was the judge's estimate of the value of a medical certificate. He could not see how a guinea could be charged for a certificate. "Your charge," he said, "for acting as a medical man is 1*s.* 6*d.* Then how can you charge a guinea for merely writing your name?" Could anything be more absurd or more unjudicial than such reasoning? We do not say whether the charge was excessive or not, as we do not know the circumstances; but is a medical certificate a merely clerical act? Is it the mere signature of a name? Is it not rather an act requiring not only integrity, but medical knowledge? We regard certification as a highly dignified and responsible act, to be duly paid for, and we are amazed to find a judge regarding it so lightly. The case is to come up again, and we hope the judge will reconsider his judgment.

TUBERCULOSIS OF THE EYE.

ALL the vascular tissues of the eyeball have now been found to be the seat of tubercle, either in the form of a primary growth rapidly caseating and comparable to primary tuberculosis of the kidney or lung, or else—and this is the more common—in the form of miliary granulation, part of a general outbreak of acute miliary tuberculosis. In the choroid both these forms have been described, the first-named being known as "tuberculous choroiditis," as distinguished from miliary tuberculosis of the choroid. In an instance of the former variety recorded by Hirschberg there was nearly complete loss of vision in the left eye; the sclerotic was reddened and œdematous, the cornea hazy, the retinal veins greatly dilated, scattered retinal hæmorrhages, and a white diffuse colour of the fundus of the eye due to the infiltration of the choroid. The right eye was unaffected. On dissection, a greyish mass, about three millimetres in diameter, surrounded the optic papillæ, being seated in the choroid, and extending to the sclerotic. It was composed of aggregations of yellow caseous tubercles. Many cases of secondary miliary tubercle of the choroid have been recorded. A case of primary tubercle of the retina has been observed by Manfredi, and of tuberculosis of that membrane secondary to tubercular growth on the iris, by Perth. Tubercle of the iris is less rare than that of the retina, and conjunctival tubercle has also been described. One of the most recent instances is recorded by Walb. It was a case in which a contused wound of the left eye, in a child a year and a half old, seems to have determined the tubercular growth. Eight

weeks after the accident (the first effects of which were simple and transitory) the mucous membrane of the eyelids had become thickened and injected, and covered here and there by small whitish-yellow caseous nodules. There was much muco-purulent secretion. Microscopically the nodular growths proved to be thickenings of the connective tissue around miliary tubercle.

TEMPERATURE OF THE LONDON WATER-SUPPLY.

DR. FRANKLAND, F.R.S., in his report upon the water supplied by the metropolitan companies during 1877, again calls attention to the temperature of the different waters when drawn from the mains for the purpose of his monthly analyses. The temperature of the Thames water supplied by the Chelsea, West Middlesex, Southwark, Grand Junction, and Lambeth Companies varied from 43·3° F. in March, to 68·0° in August. The temperature of the Lea waters, delivered by the New River and East London Companies ranged from 41·9° in March, to 67·6° in August. In such high temperatures those river waters were, as Dr. Frankland almost unnecessarily informs us, "vapid and repulsive to the palate." The deep-well waters delivered by the Kent and Colne Valley Companies showed a minimum temperature of 45·0° in March, while the maximum was 57·9° in July. Thus, while the river waters showed a range of temperature equal to 25·7° F., the range in the deep-well waters did not exceed 13·0°. Next to freedom from organic impurity, the most important quality for a desirable potable water is that it should be pleasant and refreshing to the palate. It is needless to point out how impossible it is for water to possess this quality which is delivered from the main at a temperature of 68° F. into an ordinary London house-cistern.

THE TREATMENT OF DIPHTHERIA.

PARIS, as our readers are aware, has been, during the last two years, the seat of a formidable epidemic of diphtheria, and the continued prevalence of the disease during the end of last and the commencement of this year has led to the publication of the experience of several physicians regarding its treatment. Their statements have been summarised by Dr. Ferrand in a recent number of *L'Union Médicale*. It is hardly necessary to say that none of the recorded experience is in favour of the notion of a specific remedy, but the characteristic of the therapeutics of the present day, the use of antiseptics, is strongly marked in the recommended practice. Antiseptic applications have here one of the most obvious and simple of their fields, on account of the nature, constancy, and accessibility of the peculiar anatomical feature of the disease. Tannin was employed as a local application by Trousseau, and its use in a somewhat novel fashion has been recommended by Dr. Créquy. He employs inhalations of steam from boiling water in which tannin is suspended. The vapour of the water carries with it a considerable quantity of tannin, although whether enough to exercise an appreciable influence on the exudation is somewhat doubtful. Salicylate of soda has been given internally by M. Cadet de Gassicourt, but without any satisfactory results, and salicylic acid was equally useless in the hands of Dr. Bergeron. Carbolic camphor has been praised by Dr. Soulez. This is a solution of twenty-five grammes of powdered camphor dissolved in one gramme of alcohol and nine grammes of carbolic acid. It is employed pure, or mixed with oil of almonds, as a local application to the false membrane, which is said rapidly to separate and disappear, leaving behind it a simple ulceration which quickly heals. No remedy, however, has received so much commendation as an old one—chlorate of potash. It has been strongly recommended in the past by many authorities, especially in Paris by Isambert, and Seeligmuller has lately insisted afresh on its value. He gives it in solution at least every hour, and pins his faith upon it so exclusively as to consider all other treatment necessary only for their "useful moral effect upon the parents." The removal of the fetor, the gradual disappearance of the false membranes, the reparation of ulcerations, and rapid improvement in the general state, are the effects attributed by Seeligmuller to chlorate of potash. This last effect has been ascribed to a fancied power of carrying oxygen to the blood, which contains but little, in consequence of the action on it of the diphtheritic bacteria. Its utility is corroborated by Ferrand, who, however, doubts its influence on the general state of the patients, and ascribes its action rather to its excretion by the salivary and pharyngeal glands. He has observed sometimes that the stomach does not bear it well, and even rejects it constantly. Bucquoy and Blache also recommend it. Cadet de Gassicourt made a comparative trial of chlorate of potash, cubebs, and salicylate of soda, at the Hôpital Ste. Eugénie, and does not hesitate to accord the first place to the chlorate. Cubebs and copaiba have, however, found an advocate in Trideau, who recommends, to reduce the difficulties of administration to a minimum, that they should be masked with sugar and Malagar wine. Tincture of eucalyptus was employed and recommended by Walcker; it was made by diluting ten grammes of alcoholic extract of eucalyptus by thirty-eight grammes of syrup, and was given after an emetic. All these agents thus act chiefly by modifying the affected surface, and their supposed action might be termed a "local alteration." Actual caustics have of late fallen into disrepute, although nitrate of silver is still recommended by Guillon as an application not only to, but around, the false membranes; a method deprecated by Ferrand, on the theoretical ground that the irritated surfaces become the seat of fresh membrane, like a similar surface elsewhere; and he joins Dr. Rose Cormack in advocating the simplest local application—glycerine of borax or a weak solution of hydrochloric acid, lime-water or sulphate of soda; and he recommends the alternation of these very inoffensive applications.

SICKNESS IN THE RUSSIAN ARMY.

A RECENT number of the journal of the Russian Red Cross Society, quoted in the *Journal de St. Petersbourg* of the 11th inst., gives the following particulars respecting the state of sickness in the Russian Army of the South. The troops south of the Balkans have a total of 30,956 sick, 1247 in the general hospitals, 6858 in the divisional ambulances, and 11,633 in the regimental ambulances. The troops encamped north of the Balkans have a total of 10,298 sick, 7476 in the general hospitals, 1056 in the divisional ambulances, and 1766 in the regimental ambulances. In addition to the sick among the forces in Roumelia and Bulgaria, there are 6501 sick in the reserve of the army, 5221 in general hospitals, 140 in divisional hospitals, and 1140 in regimental hospitals. The total sick in the Army of the South at the date of this report amounted to 47,764, of whom 12,000 had been transported to Russia. The mortality was diminishing, and the kinds of sickness less severe.

QUARANTINE.

YELLOW FEVER is again rife in some of the ports of Central America, and a general quarantine is at present established against all vessels that arrive at Pensacola and Mobile from places where yellow fever is supposed to exist. We say *supposed* advisedly; for, inasmuch as each port can quarantine arrivals at discretion—i.e., without let or hindrance as regards orders from the central authority—ships are sometimes unjustly delayed. Bearing this fact in mind, and its important relations to commerce as well as health, it is to be regretted that some more systematic arrangements on an international scale are not

framed and maintained, whereby the existence of epidemic diseases in any port can be quickly and accurately advertised for the benefit of the commercial community. The plan at present in vogue of announcing notifications of this kind through the Board of Trade is fragmentary, tardy, and unsatisfactory to all concerned.

COMPARISON OF OPIUM, BELLADONNA, AND ACONITE.

M. JULES SIMON establishes the following comparison between opium, belladonna, and aconite:—1. In regard to their action on the alimentary canal, opium causes thirst, dryness without acrimony, want of appetite, nausea, vomiting, constipation; belladonna, thirst, dryness with acrimony, nausea, vomiting, and diarrhœa; aconite, dryness, sensations of pricking, and burning of the tongue, salivation in full doses, vomiting, and diarrhœa. 2. In regard to their action on the circulation, opium acts as a stimulant, causes diminution of pressure, though it is sometimes without action, and in large doses causes acceleration of the pulse and collapse. Belladonna acts as a sedative, lowers the strength, retards the frequency of the pulse, and produces a febrile state of the system. Aconite acts as a sedative, diminishes the arterial tension, renders the face pallid, retards the frequency of the pulse, and stops the heart in diastole. 3. In regard to the respiration, opium allays dyspnœa, when present, by diminishing the bronchial secretions; in large doses it causes collapse. Belladonna calms down excited respiration, diminishes secretion, and in large doses renders respiration spasmodic and irregular. Aconite retards respiration by its direct action on the nerves. 4. In regard to their action in febrile states, opium augments the cutaneous secretions, and produces general malaise, erythema, and eruptions. Belladonna produces neither sweating nor general discomfort, raises the temperature, and sometimes causes scarlatina-like eruptions. Aconite lowers the temperature. 5. In regard to their actions on the secretions, opium diminishes the quantity of urine, and, in fact, diminishes the secretions generally. Belladonna causes augmentation of the renal secretion, with diminution of the bronchial secretion. Aconite causes increase of the urinary secretion, but diminishes the bronchial secretion. 6. In regard to their action on the nervous system, opium acts chiefly on the cerebro-spinal system, belladonna on the cerebro-spinal system, and aconite on the spinal cord. Opium causes somnolence, sleep, intoxication, vertigo, muscular debility, diminution of common sensibility, contraction of the pupil, diminution of the activity and vigour of reflex actions. Belladonna causes sleeplessness, gay or furious delirium, hallucinations, muscular agitation, diminution of the sensibility of the face, dilated pupils, and remarkable diminution of the reflex acts. Aconite leaves the intellectual faculties intact, but causes muscular torpor, anæsthesia, hallucination of the senses, diminution of reflex actions, and produces slight dilatation of the pupil.

THE ETHICS OF PHARMACY.

THE *Pharmaceutical Journal* has given its readers lately three articles on the Medical Acts Amendment Bills. The last of these, which appeared on the 13th instant, is interesting and noticeable, in that it refers to counter prescribing, and Mr. Freshfield's amendment, the practical object of which is to defend the present practice of chemists and druggists. The Pharmaceutical Society, however, finds it necessary to object to a memorandum lately issued by the Chemists and Druggists' Trade Association with reference to the Bill, and in so doing is, naturally enough, compelled to drift into the line of argument that we have always maintained when the subject has been referred to—viz., that counter prescribing is objectionable on all grounds, is undignified in all its aspects, and should be discountenanced as far as possible. It would, however, have been better if the Pharmaceutical Society, represented by its organ the *Journal*, had adopted this principle a long time ago. It wanted the courage of its opinions, and so, unfortunately, many months have been lost, and the common sense of the course that we have often suggested is now, as it were, thrust upon the Society by the side-wind of a trade association. "It is almost superfluous to say that the Council of the Pharmaceutical Society, regarding the treatment of disease as beyond the province of the pharmacist in a general way, discourages such practice." This sentence appeared in a leading article of the *Journal* dated June 8th, and we assume that pharmacists are prepared to adopt its principles, and practically to maintain them.

THE PUBLICATION OF OFFICIAL REPORTS.

A RUMOUR reaches us which we can scarcely credit, to the effect that the Committee on Stationery and Printing is appraising the value of reports by the number of copies of the several productions purchased by the public. It is hardly possible the obvious fact that the effective service of several Commissions depends mainly on the publication of their reports can be disregarded. Commissions which have little more than permissory powers, or, more accurately, power to permit, and general instructions to encourage, good regulations, will lose the little influence they possess if their reports cease to fall directly under the eyes of the public, and to be criticised in the press. For example, how much, or how little, authority will the Board of Commissioners in Lunacy be able to exercise in matters of detail—important to the well-being and success of asylums, but not sufficiently grave to form the occasion for withdrawal of licences,—if the annual report is not forthcoming? It must not be supposed that the number of copies of any departmental return which may be "sold," can supply the measure of its public value. The only test is the extent to which it reaches, and operates upon, public opinion, conveying useful information, and reacting upon the agency of whose past work it is the record, either in the way of encouragement or rebuke.

THE MUSEUM CATALOGUE.

MANY of our readers will be able to recall the eagerness and delight with which they listened to those admirable lectures which Mr. (now Sir James) Paget, as Arris and Gale Professor of Anatomy and Surgery, delivered at the Royal College of Surgeons during the six years from 1847 to 1852, and which have since helped to make him famous. Then, as now, it was Sir James's pride and pleasure to acknowledge his indebtedness to the rich and varied store of material in the Museum of the College. This obligation he has, at a time and under circumstances which a more selfish man would deem inconvenient and irksome, volunteered to pay in a handsome fashion—by undertaking the superintendence of a revision of the Pathological Catalogues of the Museum, which Mr. Stanley and he originally prepared over thirty years ago. Sir James Paget will be assisted by Dr. Goodhart and Mr. Doran, and probably by others.

TYPHUS HAUNTS IN THE METROPOLIS.

THE fact that 41 fatal cases of typhus were registered within registration London during the thirteen weeks ending 29th June last is not a satisfactory sign of the sanitary condition of the metropolis. It is desirable to inquire now and then as to the localities which supply the fatal cases of this virulent "filth disease." The returns of the Metropolitan Asylum Fever Hospitals afford invaluable assistance in such an inquiry. It appears that of 119 typhus fever

patients admitted to the Stockwell Fever Hospital since the month of January last, no less than 84 were removed from the union of St. Olave, Southwark (which includes also Bermondsey and Rotherhithe), 23 from Camberwell, and 11 from Greenwich (including Deptford). It is probable, let us hope, that the special typhus haunts which produced these serious outbreaks of the disease have since received attention from the local sanitary authorities, but what are we to say of a sanitary system which renders possible the existence of the conditions necessary to this wholesale production of typhus?

"HOMŒOPATHS" AND "HOMŒOPATHS."

A STATEMENT has been going the round of the papers during the last few days to the effect that Dr. Kidd, the medical attendant on the Earl of Beaconsfield, is a "homœopath," and therefore the happy recovery of the Premier from his recent indisposition must be attributed to that system. The statement of facts is faulty, and the inference unfounded. Dr. Kidd is, we believe, a practitioner who repudiates the description attributed to him, and who by no means avowedly pursues the method of Hahnemann in his treatment. It must not be assumed that physicians who do not give large quantities of drugs are "homœopaths," or that they act on the precept *similia similibus curantur*. Much, if not all, the credit the absurd system of "infinitesimal doses" and the unscientific hypothesis of cure by causation have secured, has been accumulated by the success of men who, while calling themselves homœopaths, have practised precisely as other physicians practise. The charm of novelty has instituted a new claim to credit, and quite average success has been glorified as signal triumphs over disease.

THE LATE SERGEANT M'CARTHY.

THE treatment of Sergeant M'Carthy at Chatham Convict Prison was debated in the House of Commons on Friday, the 12th inst., and occupied almost all the evening. Some months ago we pointed out that the rash statements made at the inquest in Dublin could not be sustained, and that the report of Sir James Ingham exonerated the officers of the prison from all blame. Indeed, there can be no doubt that Dr. Pitman was quite justified in coming to the conclusion that M'Carthy's life was really prolonged by the tranquil and regular routine of the prison, and we regret very much that Mr. Mitchell Henry should have so far forgotten what is due to Sir James Ingham as to call his report a disingenuous one, and to Dr. Pitman as to say that he could not read his statement without indignation. We need not again discuss M'Carthy's illness and the questions involved therein, for Sir James Ingham's impartiality and Dr. Pitman's professional opinion require no defence, and will have their due influence with all except those who have prejudged the case. The groundlessness of the charges against the medical officers was completely exposed by both the Solicitor-General and Mr. Cross, so that we hope that the matter will now be allowed to drop.

ELECTROLYSIS OF NEW GROWTHS.

THE subject of the electrolytic treatment of malignant tumours has been dealt with in two papers published in Virchow's *Archiv* (vols. lvii. and lxx.) by Dr. Neftel, of New York. A brief summary of the second of these papers is to be found in Hayem's *Revue*, in which it is stated that Dr. Neftel holds it to be important to destroy, not only the tumour itself, but the surrounding tissues completely. Accordingly (chloroform being of course administered) a platinum anode is thrust vertically into the centre of the tumour, right through to its base, and three or four cathodes placed at short intervals around the tumour. The voltaic current, which is rapidly increased in intensity (from forty-five to fifty and sixty elements being used), is then passed through these poles for about five or ten minutes, when the cathodes are withdrawn and reinserted at other spots, until finally the whole periphery of the tumour has been traversed by the current. The operation lasts from half an hour to an hour and a half; the tumour becomes livid, grey, and finally black, and if any portion retains its normal appearance, a second anode must be introduced, and the operation continued. The very firm adhesion between the anode and the tissues renders it necessary to use some force in its withdrawal. The healthy-looking granulations left after the separation of the sloughs some days later are also treated by galvanic currents of low intensity, the application being continued even after the wound has cicatrised.

"SINGULAR CASE OF SOMNAMBULISM."

WE reproduce the following from the *Globe*:—"Simon Fraser, who was found guilty on Monday of killing his child in Glasgow while he was unconscious by reason of his condition of somnambulism, was again brought on Wednesday before the High Court of Justiciary, Edinburgh, and set at liberty, the Lord Justice Clerk remarking that *he understood arrangements had been made with the prisoner and his relatives to prevent the repetition of such a disaster.*" The italics are ours. The case is certainly entitled to the description "singular," and we venture to hope the "arrangements" made may be satisfactory. When somnambulism takes the form of "killing" either the subject of the phenomenon or those with whom the sleep-walker is brought in contact, it might almost be described as "serious," and any attempt to prevent repetition, by enforcing "arrangements with the prisoner and his relatives," needs to be effective. It would be interesting to know what the Scotch Board of Commission in Lunacy may think of such a case, as the law has nothing to say to it.

ATMOSPHERIC ORGANISMS.

M. P. MIGUEL gives, in a paper recently read before the Académie des Sciences at Paris, the results of his observations on the minute organisms seen in suspension in the air, the diameter of which exceeds two millièmes of a millimetre. He finds, first, that the mean number of microbia is at its lowest in winter, rapidly augments in spring, remains stationary in summer, and falls in autumn; and, secondly, that rain always occasions recrudescence of these same microbia. In other words, temperature and moisture appear to be, apart from purely local influences, the principal causes of variation in the number of the microgerms of the atmosphere.

DEATH OF A SCHOOLBOY AFTER A FIGHT.

A LITTLE BOY at the Sheffield Collegiate School met his death a few days ago in a manner which caused considerable distress to all concerned. It appears that a schoolboys' quarrel arose, and two of the boys fought. The fight was not extremely ferocious, lasting barely five minutes, and ended in the ordinary black eye and bloody nose. No foul blows or kicks were given, and none of the blows were very violent. The poor little combatant who was vanquished, however, died a few days afterwards, but the medical evidence went to show that the lad was sickly and weak, and was the subject of purpura in rather an extreme form.

THE CHEMISTRY OF THE URINE.

SALKOWSKI has reinvestigated the constitution of the precipitate which is obtained by the addition of iron to urine freed from phosphoric acid. Thudichum has asserted that this precipitate is rich in organic substances, and especially

in cryptophanic acid. Salkowski has, however, been able to discover very little organic matter in the precipitate. He has, moreover, investigated the red tint which is produced by the addition of nitric acid to the distillate from urine acidulated with acetic acid. The colouring matter is not indol, because it comes with pure nitric acid, while the colour of indol requires nitrous acid for its development. It appears to result from the decomposing action of the acid, since it is not to be detected in the distillate from alkaline urine, and it is neither of a basic nor of an acid character, for its development cannot be hindered by the addition of either acids or bases.

AN influential and very numerously attended meeting of the Charity Organisation Society was held at the Westminster Palace Hotel on Thursday, the 11th inst., under the presidency of the Duke of Northumberland. Among the speakers was Mr. Gladstone, who most eloquently and emphatically condemned the voting system *in toto*, but it appears that there are legal difficulties in the way of abolishing the voting altogether. The Society has, however, made some progress during the past year, and it appears that the persistent reiteration of arguments has influenced many wealthy charitable people to give specially to institutions in which the voting system does not exist.

The Colonies and India has recently published some useful Notes on Emigration. They have no special medical aspects; but, emanating from the pen of Mr. H. B. T. Strangways, an old and experienced Australian colonist, they are entitled to careful consideration, as urging emigration as a means of dealing successfully with the population of the United Kingdom, and specially with the surplus female population of the middle classes. Those of our readers who are interested in the question will gain much useful information by reading the articles above referred to, which appeared in *The Colonies* of May and June last.

THE external iliac artery was tied by Mr. Spencer Watson at the Great Northern Hospital on the 17th inst., for femoral aneurism, immediately below Poupart's ligament. The patient is a man aged thirty-two years, a bricklayer, of apparently sound constitution, and who has not suffered from syphilis. He was at one period of his life a drinker of spirits, but latterly has taken beer only, the latter rather freely. The operation was performed with antiseptic precautions, and Lister's dressings were used. The next morning he was doing well. Temperature normal; pulse 82. The temperature of the limb was 95·6°.

AT a meeting of the Council of Queen's College, Birmingham, held on July 12th, Dr. Sawyer was elected Professor of Materia Medica and Therapeutics, in the place of Dr. Mackey, resigned. Dr. Rickards (formerly Professor of Physiology) was appointed Professor of Pathology, in succession to Dr. Sawyer. Mr. Henry Eales was elected an additional Demonstrator of Anatomy.

AMONGST the staff accompanying Sir Garnet Wolseley to take possession of Cyprus will be seen the name of Surgeon-General Sir Anthony Dickson Home, K.C.B., V.C. He became a graduate of the University of St. Andrews and a member of the Royal College of Surgeons of England in 1847.

THE steamer *Vladimir* recently carried from Odessa, for service in the Army of the South, sixty-eight young medical men who had just completed their studies. Twenty-two sisters of charity were reported as having passed through Odessa on their way to the hospitals in the Crimea and in Roumelia.

THE butchers of Odessa have come into collision with the police of the city, on a question of the sanitary regulation of the slaughter-houses. The butchers refused to carry out a mandate of the municipality, and resisted the police when an attempt was made to enforce it. The police got the worst of the struggle, and it became necessary to call out troops; but, elated with their success, the butchers even opposed the troops, until it was made obvious to them that the patience of the authorities had become exhausted, and the soldiers were about to suppress the riot by force of arms. The butchers then yielded, and forty were placed under arrest.

THE annual meeting of the Society of Medical Officers of Health was held in the rooms of the Social Science Association, John-street, Adelphi, on Wednesday, the 10th, under the presidency of Dr. Stevenson. Mr. John Liddle, who has for many years held office, resigned his post as Treasurer to the Society, and received a very cordial vote of thanks. The titles of papers promised for the ensuing session were announced, the Council was reappointed with some few changes, and after the transaction of other routine business, the Society adjourned.

ACCORDING to the report of the medical officer of health of Sandown, I.W., for the three months ending June 30th there were only three deaths registered in the district of Sandown. One of these was that of a visitor, who came into the town with a fatal disease upon him. This represents an annual rate of 4·2 per 1000, inclusive of visitors, and 2·8 per 1000 of the resident population.

AT the recent election of Fellows into the Council of the Royal College of Surgeons of England, when 307 metropolitan and provincial Fellows recorded their votes, 91 of them came from provincial towns; some from very remote places, as Dublin, Redruth (Cornwall), Liverpool, Manchester, Wolverhampton, Hull, Plymouth, North and South Wales, &c.

AMONGST the volunteers now making such good scoring at the Wimbledon Camp will be seen the name of Private A. Humphry, of the Cambridge University, who has already carried off several prizes. He is the son of Professor Humphry, of Cambridge.

LAST Sunday, Dr. Frederick Noon, of Earlestown, Lancashire, whilst on a visit to Dublin, was attacked with a fit of epilepsy, and on being removed to Steeven's Hospital, died in a few minutes.

FRENCH REPORT ON HYDROPHOBIA AND RABIES.

ONE of the public needs is a carefully prepared brief epitome of the symptoms of canine rabies, which might receive wide diffusion under Government authority, and lead to the early recognition of the disease. In France such an account has just been issued in the form of a report by two authorities of European reputation, MM. Bouley and Proust, to the Committee of Public Hygiene. Their report embraces also the preventive measures which they believe to be the best, and also a series of suggested points on which information relative to the disease should be obtained, on a large scale. There is no doubt that authoritative information of this character ought to be obtained in this country, and we therefore quote these suggested heads, as of value for the guidance of future investigators:—1. Sex. 2. Age. 3. Residence. 4. Species of animal inflicting the bite. 5. Mode of inoculation, nature and seat of virulent wounds,

It is properly suggested that bites upon the hand should always be distinguished from bites elsewhere on the upper limbs, since the hand is so often uncovered. 6. The signs supposed to establish the character of the affection of the animal. 7. The date of contagion. 8. The number of persons bitten at the same time, and the proportion of them who have been attacked by hydrophobia. On this point they remark that the information obtained by the Committee on Epizootics give one immunity for every two bites, while the statistics of Faber, of Wurtemberg, give one death per six persons bitten, those of the Vienna hospital one death in five bites, and those of Leblanc one death in seven bites. This apparent discrepancy is probably due to the better information obtainable regarding the cases in which a bite is followed by the disease than in those in which no result occurs. 9. The date of the first symptoms and the duration of the period of incubation. 10. The duration of the disease. 11. The mode of termination. 12. The means employed to counteract the contagion. On this point minute details are asked for, and include the caustic used, and if widely and deeply applied, or superficially. 13. The time after inoculation before cauterisation. 14. The mode of treatment.

The report indicates next the circumstances which render a dog the object of suspicion. 1. When a well-known dog, contrary to its character and habits, becomes aggressive, and bites without sufficient reason those who are *à la portée de ses dents*, and the suspicion should be the stronger the more familiar to the dog the bitten person has been. 2. When a dog within a house attacks strange persons, without doing so in a "guardian" capacity. 3. When a stray dog attacks persons whom it meets without being excited to do so. 4. When a stray dog suddenly bites those whom it finds in their own houses.

Enjoining cauterisation as the only efficient remedy, they advise, as the best, red-hot iron, pointing out that the hotter the iron the less is the pain and the greater the efficacy. In default of red-hot iron, Vienna paste or sulphuric acid is recommended. It is advised that whilst the iron is being heated, or if no caustic can be obtained, the bitten limb should be compressed by a tight band above the bitten spot, and an attempt made, by pressure with the fingers, to express the liquids contained in the wound, washing it continually. If the bite is upon the mouth the person is recommended to suck it himself immediately, and it is urged that suction is unattended with danger if there is no abrasion upon the lips or on the mouth. The report goes on to warn the public against the pretended specifics of quacks, and emphasises the fact that there is no preservative against hydrophobia except the deep and immediate cauterisation of the wounds.

The next section of the report enjoins the immediate destruction of every animal, dog or cat, bitten by a dog which is either rabid or suspected of being so.

The following section considers the distinctive characters of rabies in the dog at its different periods. It points out—1. That the disease is not characterised in its commencement by attacks of furor, but, on the other hand, it has then the characters of a mild ailment, although there can be no doubt that the poison is virulent from the first, and that the caresses of the dog are then much more dangerous than its bite, since it has at this period little tendency to attack. 2. At first there is a change in the character of the dog; it becomes sad, dull, taciturn, seeks solitude, and retires into the darkest corners. But it does not remain long in one place; it is restless and disturbed, goes out and comes in, lies down and gets up, slinks about and scratches with its fore-paws. Its movements, attitudes, and gestures seem to indicate that for a moment it sees phantoms, for it bites in the air and springs forward, as though attacking real enemies. 3. Its aspect is changed, and its expression is a mixture of sadness and ferocity. 4. In this stage the dog is not aggressive as regards man; its character in this respect is much as before. It is docile and submissive to its master, and in obeying his voice it gives signs of gaiety which may for a moment bring back its normal aspect. 5. Indeed, instead of an aggressive disposition, the dog often manifests, at this period of rabies, the opposite tendency. The affection towards its master and the members of his family may even be exaggerated, and be manifested by constant movements of the tongue, with which it is eager to caress the hands and the faces which it can reach. 6. This affection is so persistent in the dog that it may avoid biting its master even during the rabid paroxysms, and his influence over it may be maintained even when ferocious instincts begin to manifest themselves and to dominate its conduct. 7. The rabid dog has no horror of water, but, on the contrary, is eager for it. As long as it can drink it satisfies its intense thirst, and when the spasm of the throat prevents swallowing, it plunges its muzzle into the water and bites, so to speak, the liquid which it cannot swallow. Thus there is no "hydrophobia" in the rabies of the dog. 8. The rabid dog does not refuse its food in the commencement of the disease; on the contrary, it often eats with more than usual voracity. 9. When the desire to bite, which is one of the essential characters of rabies at a certain period, commences to manifest itself, the animal satisfies it first upon inert bodies. It bites the wood of doors and furniture, tears carpets, coverings of furniture, &c., and crunches between its teeth hay, wool, &c.; eats earth, the dejections of animals, and even its own, and in its stomach the *débris* of all these substances are accumulated. 10. The abundance of saliva is not a constant sign of rabies in the dog. Sometimes the mouth is moist, and sometimes it is dry. Before the paroxysmal period the secretion of saliva is normal; during that period it is increased, and lessens again at the end of the disease. 11. The rabid dog expresses the painful sensation due to the spasm of the throat by movement of the fore paws on each side of the mouth, such as a dog makes with a bone in his throat. 12. In the particular variety of rabies called "dumb-madness," the paralysed lower jaw remains separated from the upper jaw, and the tongue is protruded and dry, and the mucous membrane of the mouth has a brownish-red colour. In some cases the dog vomits blood. 14. The voice of the rabid dog changes its tone, and its bark is always somewhat different from the customary one, commonly rougher. In dumb-madness, however, this character is absent, and hence the name. 15. The sensibility is considerably lessened in rabies. If the dog is struck, wounded, or burned, neither the moans nor the cries are heard by which animals of the same kind express their sufferings and even their fears. In some cases the dog even bites itself, making deep wounds with its teeth, and does not try to bite familiar persons. 16. The rabid dog is always violently excited by the sight of an animal of its own species. Whether seen or heard, the rabid furor shows itself or increases, and it springs towards the other dog to tear it with the teeth. The presence of a dog produces the same effect on rabid animals of other species, so that the presence of a dog is, as it were, a test by which the presence of rabies previously latent may be verified. 17. The rabid animal often flies from its home at the moment when, in the progress of the disease, the ferocious instinct begins to overcome it, and after one, two, or three days of wandering, during which it has tried to satisfy its ferocity on all the living creatures it could find, it often returns to its master's house to die. 18. During the period of furor, the disease is characterised by the expression of ferocity which it gives to the aspect of the animal, and by the desire to bite which overcomes it on any opportunity, but its attacks are always directed by preference against its own species. 19. The attacks of furor are alternated with intervals in which the animal, exhausted, falls into a state of relative calm, which may mislead as to the nature of the affection. 20. Healthy dogs seem gifted with the power of recognising the rabid state of other dogs, and, instead of fighting, will often fly from them. 21. The rabid dog not only attacks dogs in preference to other animals, but the latter in preference to man. Then, exhausted by its paroxysms and contests, it walks with a vacillating air, recognisable by its pendant tail, head turned towards the earth, wandering eyes, and open mouth, from which hangs a bluish tongue, covered with dust. In this state its aggressive tendency is not great, but it bites all, men or animals, which come in its way. 22. The rabid dog which dies a natural death dies from paralysis and asphyxia. Up to the last, the instinct to bite governs it, and it must be distrusted even when apparently transformed into an inert body. 23. After death there is constantly found in the stomach a mixture of hay, straw, wool, fragments of cloth, leather, cord, earth, leaves, stones, &c., which have an important diagnostic value.

ABSTRACT OF SIX LECTURES
ON THE

DIAGNOSIS AND SURGICAL TREATMENT OF ABDOMINAL TUMOURS.

Delivered at the Royal College of Surgeons,

By T. SPENCER WELLS, F.R.C.S.,
HUNTERIAN PROFESSOR OF SURGERY AND PATHOLOGY.

IN the Fifth Lecture, on June 19th, Mr. Wells entered into a description of the relative results of the clamp and ligature in ovariotomy, spoke of the treatment of adhesions, and of various accidents which may occur during the operation. He then spoke of incomplete and exploratory operations and their results, of successive changes in the mode of operating and in the after-treatment, and concluded by an estimate of the amount of human life already saved by ovariotomy. The following remarks on the clamp and ligature may be read with advantage by practical surgeons :—

"The relative advantages of the clamp and ligature may possibly be best learned from the results of actual work. There is no doubt a very great advantage in the clamp at the time of performing the operation. It is put on quickly, and bleeding is suppressed with complete security. In all the cases I have done, I have never known a single instance of dangerous bleeding in consequence of the slipping of the clamp; whereas after the use of the ligature I have known that occur. I myself have lost two patients from primary hæmorrhage a few hours after the operation, simply from the slipping away of the broad ligament from the grip of the ligature, internal bleeding taking place, and the patient actually dying of primary hæmorrhage. But after the use of a good clamp, I have never had a case of serious bleeding. I know also that this accident has happened to other surgeons of my acquaintance, and has proved fatal; therefore in estimating the advantages and disadvantages of the two methods, one must allow that, as far as regards security from primary hæmorrhage, the advantage is altogether on the side of the clamp. The advantage of the ligature is that it allows the wound to heal with less interference, less frequent dressing is necessary, and the patient is certainly, in the first few days after the operation, in a more comfortable state than occasionally happens after the clamp. Very often the patient is quite unaware of a clamp being there. It does not cause the slightest inconvenience. But occasionally there is a certain amount of unpleasant discharge around it, and some redness and swelling where the lips of the wound are brought round the pedicle, which one does not meet with in the wound when the ligature is used. In this respect the balance of advantage is in favour of the ligature; but the main question is, of course, what is the proportion of recoveries? I will not attempt to calculate what this may be in the hands of other surgeons, but I can compare the results of the clamp and ligature in my own practice. I have here a table of the results of 900 cases. I completed the 900th operation last week; and I have gone into the result of the treatment by the clamp and by the complete intraperitoneal ligature, or what we call the ligature returned. I find there were 627 cases treated with the clamp, of which 130 died; that is, a mortality of 20·73. With the ligature, 157 cases were treated, with 60 deaths, or a mortality of 38·2. Speaking simply, the mortality is nearly doubled; the mortality of the same operation in the hands of the same operator is 18 per cent. more with the ligature than with the clamp. Now, whatever may be said about inconvenience, about the necessity for frequent dressings, about the possibility of some erysipelatous or inflammatory condition around the lips of the wound in the abdominal wall, the evident reply is that it is not to be compared in importance with the result to the patient. It does not much matter to her whether she be a few days more or less in bed or suffering more or less inconvenience; the great point to her is whether she dies or gets well; and if, out of a large number of cases, the mortality be nearly double with the ligature, it would be a very strong reason indeed that would induce one to use the ligature in preference to the clamp, supposing the case to be one where the clamp could be applied. Supposing one is driven to something else than the clamp, then probably the ligature is the best alternative; but if it be a case in which one has a free choice between clamp and ligature, we must take these facts into consideration and adopt the method which seems to be most likely to lead to the recovery of the patient.

"I must ask you to allow me to read what I said in my book on 'Diseases of the Ovaries,' which I have often referred to before in these lectures, about these two methods: 'But no surgeon who has had much experience of ovariotomy would bind himself to adopt in all cases either the extraperitoneal or the intraperitoneal method, or any of the modifications by which either principle is carried out in practice. Every surgeon should go to an operation prepared to carry out the particular method which appears to be best adapted to the peculiar circumstances of the case which present themselves as he proceeds. If the pedicle be small enough to be securely held in a clamp of moderate size, and long enough to permit the clamp being fixed outside the closed wound, without much pull on the uterus or broad ligament, no more ready or more successful method than the clamp can be desired. When the pedicle is so short, broad, or thick, that a very large clamp would be necessary to secure it, that the wound could not be closed around it, and the traction upon the uterus when the clamp was fixed outside the abdominal wall excessive, either the ligature or the cautery should be preferred to the clamp. Or if, after applying a clamp, it be found that it cannot be fixed outside without undue strain upon the uterus, either the cautery may be used, or the pedicle may be transfixed and tied, and the clamp removed after it has served its temporary purpose.' To that I have now very little to add. I do believe surgeons should be prepared to adopt one or other method, as it seems to be most advisable when the operation is approaching its completion. I may have a little more to say about this when we come to consider the question of antiseptics in ovariotomy, because it has been supposed that the antiseptic system will interfere with the use of the clamp; that if we attempt to carry out the antiseptic system the clamp will be so serious a hindrance it would be better to give it up altogether, and adopt the ligature as the most consonant with the requirements of the antiseptic system."

Speaking of accidents during the operation, Mr. Wells said: "I spoke the other day about a sponge being left in the abdomen; and I have another confession to make, showing the necessity for counting forceps as well as sponges. Not very long ago, I removed both ovaries from a young married lady, and a great many forceps were used. After removing one ovary, and securing the pedicle, the other ovary had to be removed. It was a very short pedicle, and five or six of my torsion-forceps were put on in order to secure the bleeding vessels while I was tying them separately. I took off, as I thought, every pair of forceps, closed the wound up, and everything seemed quite as it should be. But, about two hours after the operation, I received a message from a friend who was putting up the instruments for me to say there was a pair of forceps missing. We knew exactly the number of forceps; if we had not known that, one pair would not have been missed. This shows how necessary it is always to know how many forceps are taken. It was about five in the afternoon when I had this message: 'There was a pair of forceps missing, probably they might be in the patient.' Imagine the sort of feeling with which one would receive that intimation. I at once went to the patient. She seemed so well I did not like to disturb her; there was some doubt where the forceps might be, so I thought I would wait a little longer. I waited till night; she still seemed pretty well, and I thought I would wait till the morning; but in the morning, the nurse told me the lady had been very restless. I then made a careful examination, by the vagina and rectum and abdominal wall, to see if I could feel the forceps, but there was nothing to be felt at all. Still I was uneasy, and I thought I had better open the wound. So I asked Mr. Thornton to come with me and throw some carbolic spray over the abdomen, and making some excuse to the patient just saying I thought it necessary to change the dressing, and it would be as well that she should not feel it, we gave her methylene, removed the dressing, and took out two stitches. I put one finger in, but at first could not feel the forceps. At last I found something hard, put another finger in, and found the forceps wrapped up in the omentum. From the way in which the omentum had insinuated itself into the ring-handles of the forceps and between the blades, it was easy to understand how difficult it was to find and remove the instrument; but I did it, returned the omentum, closed the wound, and the patient was none the worse. She got perfectly well, and to this day does not know that anything unusual occurred. Pray let me use this confession to

impress upon you the necessity, not only of counting sponges, but of counting instruments also, that you may avoid any such painful experience."

Correspondence.

"Audi alteram partem."

STIMULANTS IN THE TREATMENT OF PNEUMONIA.

To the Editor of THE LANCET.

SIR,—The use of stimulants in certain cases of pneumonia, as recommended by the late Dr. Anstie, though unsuccessful in the case about to be related, has many points worthy of the most careful consideration.

I. M——, a married woman, aged thirty-eight years, the mother of three children, had some time previously been under my treatment for prolapsus uteri and leucorrhœa. She was a tall, delicate, anæmic woman, subject to chronic bronchitis in the winter months, and was therefore a bad subject for pneumonia. On October 1st of last year I was sent for, and found her suffering from cough, rusty sputum, quick pulse, pain in the left side, and the symptoms of pneumonia generally. There was well-marked dulness over the base of the right lung, and comparative dulness, with crepitation and bronchial breathing, over the base of the left. The temperature in the axilla was 101·2° F. The cough was troublesome, and the face flushed; the pulse 136, and the respiration 38 per minute.

Wunderlich lays it down as a rule that a case of pneumonia must be considered *severe* when the temperature records 104° F., the pulse more than 120, and the respiration more than 40 per minute; *slight* if below these numbers. Not wishing to burden this case with details, I may state that at the height of the disease the pulse ranged from 140 to 160 per minute, the respiration was 48 per minute, and the highest temperature recorded was 103·8° F. According to Wunderlich's rule, the case was severe as regards the number of the pulse-beats and respirations, but was not severe as far as temperature was concerned. The consolidation of both lower lobes of the lungs increased, the lips and cheeks became of a deep purple from defective aeration of the blood, and the patient died on the ninth day.

The treatment adopted from the first was supporting and stimulating; 8 oz. of whisky in divided doses every three hours was given; this amount was increased to 20 oz. on the fifth day, and was given in divided doses during the twenty-four hours; Liebig's extract of meat and milk-and-water formed the chief part of the nourishment; counter-irritation was tried to the chest in the form of turpentine fomentations, and afterwards linseed-meal and mustard poultices. On the sixth day of the disease there was an entire absence of the chlorides in the urine, although a considerable amount of chloride of sodium had been taken in well-salted beef-tea. On the seventh day of the disease there was a trace of albumen, and for several days previously there was a large quantity of urates, the specific gravity of the urine being above the normal—1023 to 1026.

The treatment of pneumonia has been one of the most discordant topics in the science of medicine. About fifty years ago bloodletting was the practice, but Laennec soon became dissatisfied with this practice, and believed that it was often injurious. At a later date antimony in large doses was introduced by Rasori, but the Rasorian method soon became unsatisfactory, as on one occasion Laennec lost five patients thus treated out of sixteen, and on another occasion twelve out of thirty cases were lost. Andral states—"I have not seen pneumonia ameliorated by large doses of this medicine (tartar emetic), for neither has it appeared to do good when borne by the stomach, nor when it has excited distressing nausea and vomiting."

The late Dr. Anstie mentions one case of a man, aged twenty-four years, who took twenty-four ounces of brandy in the twenty-four hours, and who recovered; and another case of a child, aged fourteen months, who took six ounces of wine in the twenty-four hours, and who also recovered. During my residence as house-surgeon in a large provincial hospital I saw a considerable number of cases of pneumonia thus treated, and the majority successfully, and I believe that it is the more rational treatment, especially in the aged, in the inhabitants of large towns, and in those in whom vitality is low or defective.

Yours, &c.,

July 16th, 1878. J. G. THORNLEY, M.D.

HYDROPHOBIA.

To the Editor of THE LANCET.

SIR,—Perhaps the following history of a case of hydrophobia and treatment by means of wourali may prove of some interest to your numerous readers.

On March 21st, 1878, Kallapuanth, a free coolie boy (born in the colony), aged nine years, was bitten by a dog supposed to be rabid. On admission to hospital the wounds were found to be slight and situated on the scalp. I had the scalp shaved, and the wounds well sucked. After this strong nitric acid was applied, and the wounds dressed with ordinary carbolic oil. The patient being placed in bed, half an ounce of sulphate of magnesia was given; extreme quietness to be observed. Next day the boy was free from pain, and wounds healthy. On the 25th of the same month the patient was discharged, the wounds being entirely healed. During this time the patient did not exhibit the least unfavourable symptom.

On April 4th his father brought him to hospital suffering from intermittent fever. The dispenser of the hospital gave him five grains of sulphate of quinine, which relieved him, and next day the boy was perfectly well.

On April 6th I received a message in the morning to go immediately to the hospital. I went at once, and found this boy with all the symptoms of hydrophobia. I tried to give him a dose of a concentrated solution of bromide of potassium and chloral hydrate (half an ounce altogether), but failed, as he could not bear the sight or sound of fluid. I then tried giving it by enema, but failed for a similar reason. Not having any hypodermic solutions at hand at the time, I determined on trying the wourali poison, it having a powerful sedative action. Having some arrows tipped with the poison, I introduced one in middle of cervical vertebræ and another in middle of lumbar vertebræ. No visible effect was produced within an hour. I then inserted a third arrow for a moment, close by the first one. The effect was instantaneous and visible to those around. The boy became quiet, and took nourishment as well as water. He then fell into a quiet sleep, and, awaking in four hours, asked for food. Having obtained it, he lay quiet for an hour; then, turning on his side, with a deep sigh, expired. From the time of insertion of the third arrow he was entirely free from pain and spasm.

This makes the twelfth case of hydrophobia I have met with since beginning my medical career, and the symptoms presented in it the worst. In conclusion, I may say that if it were possible to obtain the wourali poison in a fluid form, and use it by means of the hypodermic syringe, so as to be able to determine exactly the amount necessary to produce a sedative effect, we should solve that difficult and contested question of finding an antidote to the terrible scourge, hydrophobia.

West Coast, Demerara. H. HUNTER, M.D.

P.S. I may mention that the arrows were supplied me by S. B. Trotman, Esq., proprietor of the estate on which the case occurred, and who had previously asked me to try them should I ever have a case of hydrophobia. He had made a similar request to other medical men years before, but they did not avail themselves of it. The arrows were originally obtained by Mr. Trotman from the Bucks or native Indians of this colony, who alone, it is said, understand the method of making the wourali poison.

To the Editor of THE LANCET.

SIR,—The following case of hydrophobia, divested of extraneous comment, may be deemed worthy of record in your columns:—

Ada Mary O——, aged eight, an intelligent child of excitable temperament. About six in the afternoon of the 17th of January, 1878, she was brought to my residence for examination after an injury to the right arm. There were three

wounds, two anterior and one posterior, at the upper part of the lower third of the arm. The wounds in front were incised and everted, the one behind punctured. It was stated that she, in company with her sister, after quickly crossing a road in the suburbs of the town, was bitten by a dog as soon as she had reached the causeway. The animal ran up the road, and was not seen by them again. Late in the day it was reported that a dog in a rabid state, after tearing a policeman's coat, had been killed by his staff. That was in a distant part of the town, and was supposed to have been the same animal.

The wounds had been cauterised immediately after the occurrence by a neighbouring chemist. I recauterised them freely. The wounds cicatrised in little more than a week.

I heard no more of the case until the 26th of April, after an interval of fourteen weeks. In the morning of that day my immediate attendance was requested, as the child had been taken alarmingly ill. On my arrival it was soon apparent that hydrophobia in its initiatory stage had set in. The child's health, I was informed, had been good, and there had been no abnormal deviation until the last two or three weeks, when slight psychical disturbance occurred in the form of inordinate fits of laughter, in the absence of any assignable cause. The previous evening she had complained of pain and stiffness in the right arm, extending to the back part of the neck on the same side. She had slept until four in the morning, when she became restless, and left her own temporary bed for that of her parents, desiring her mother not to breathe on her, and stating that a draught was blowing upon her. These were the chief premonitory symptoms. I found the child extremely irritable and excitable, cardiac action tumultuous, and the pulse at the wrist a mere flutter. By my request a little water was brought. She hesitated, and seemed to shrink at the thought. A teaspoonful was given. This was instantly followed by dysphagia and clonic spasm of the inspiratory muscles; these soon relaxed, and the inspiratory function was restored. After a short interval the fluid was repeated, and was followed by precisely similar results.—Evening: Excitability of nervous and sanguineous systems unalleviated.

27th.—Morning: Insomnia persistent through the night. Dysphagia, spasm of epiglottis, and nervous and sanguineous disturbance as before.—Evening, 6.30: Sir Henry Cooper and Dr. Daly saw the case with me. We had interviewed the patient, and retired for deliberation, when I was hastily summoned to the sick room. A marked psychical change had supervened, our patient had entered the stage of rabidity, and was in a state of uncontrollable excitement. She had asked for a china basin that stood near, and in furore had flung it violently from her. Mucus, mixed with saliva, flowed copiously, and she forced her fingers into her mouth to remove it. A draught containing twenty grains of chloral hydrate was prescribed. I gave it from a teaspoon at short intervals. About two-thirds of the draught had been taken, when persistent spasm of the inspiratory system ensued, the pupils dilated, three faint gasps followed, and cardiac action had ceased.

My treatment had been as follows:—

26th.—Morning: Antispasmodics at brief intervals during the day. Evening: An aperient of subchloride of mercury, which acted freely in the night.

27th.—Morning: Sedative mixture. Midday: Chloroform at short intervals, followed in the afternoon by bromide of potassium. The treatment, however, had been nearly passive. Medicines were partly withheld by the attendant, from a fear of inducing paroxysms of suffocation.

The case will be accepted as characterised by features denoting the true type of the disease. Its rapid course (thirty-two hours) and sudden termination in spasm of the inspiratory muscles, inducing asphyxia, mark, unquestionably, its pathognomonic character.

As far as the efficacy of treatment in similar cases is concerned, I have little hope. Our therapeutics, it will be admitted, have hitherto failed. However, were another case, unfortunately, to fall under my observation, I should preserve, as far as possible, the nervous centres in a state of quietude, make the œsophageal canal a sealed passage, treat the case hypodermically, and sustain the system by nutritious injections.

I am, Sir, your obedient servant,

Hull, July 13th, 1878. GEORGE LOWTHER, F.R.C.S.

THE INDIAN MEDICAL SERVICE.

To the Editor of THE LANCET.

SIR,—As the period for the examination for admission to the Indian Medical Service is approaching, a few remarks concerning that department, more especially with regard to the impending changes, will be of interest to intending candidates. That any changes are impending seems to be but little known in this country, but in India it is only too well known that the authorities in England and those in Calcutta are in communication on this subject. Following on the failure of the late changes in the Army Medical Department, it seems extraordinary that the supreme authorities should undertake to make grave alterations in a service without in any way attempting to ascertain the opinions of the members of that service. Yet this is what is being done in the case of the Indian Medical Service. So far have they acted on this principle of secrecy that even the Surgeons-General of the Madras and Bombay Presidencies have not been consulted in any way, nor has the nature of the impending changes been intimated to them.

In spite, however, of the secrecy maintained, it is pretty certain that the most important change will be the splitting of the service into two distinct departments—military and civil. All present members of the service will be allowed to elect for either military or civil service; but once that choice is made, no further change will be allowed. In future, the two departments will be recruited separately. The Military Department will be amalgamated with the British Medical Department serving in India. All regimental appointments will be abolished. In fact, the regulations for the Indian Military Medical Service will be almost the same as those of the "Army Medical Department" serving in India. The Civil Medical Department will probably remain much as it is now. Under the present system the ability of an officer in civil employ to revert when he pleases to regimental work is often inestimable. Under the new system of course he loses this chance. As regards the Military Department the new system will be disastrous. There being no regimental appointments, the medical officer will only be entitled to the "acting" allowance—that is (supposing the case of a surgeon under five years), instead of getting 450 rupees a month, he will only get 386 rupees a month. In fact, the officer of the Indian Military Medical Department will be in no way better off than his brother in the "A. M. D.," and will not even have the solace of looking forward to a higher pension. These, Sir, are the serious changes that are impending our devoted service, and no one can have any doubt that they are brought about solely by the unfortunate pass to which the Army Medical Department has been reduced. In order that that unfortunate service may be rescued from its present peril we are to be sacrificed. The memorandum issued by the India Office to intending candidates gives the same meagre information that it always has done, and there is nothing to indicate the serious changes that are about to take place. Under these circumstances it is only fair that candidates should have some warning of what is likely to occur, and therefore I trust, Sir, that you may think fit to publish this letter.

I am, Sir, yours, &c.,

July 16th, 1878. SURGEON, I.M.D.

"SINGLE LUNACY PATIENTS."

To the Editor of THE LANCET.

SIR,—In *The Times* report of the Datchet case, and also in your own remarks upon it in your last number of THE LANCET, it is not made clear what the exact misdemeanour was. Did the offence lie in receiving the lunatic without certificates, or receiving one lunatic into a house which was not licensed for the purpose? The first is a misdemeanour, but the second is not, as no licence is required by the law for the reception of single patients. The practice is so general amongst country practitioners of taking a single patient, properly certified, but without the house being licensed, that we are desirous to learn caution from the painful experience of our fellow-practitioner at Datchet.

I am, Sir, yours, &c.,

Bedford, July 15th, 1878. A LICENSED ONE.

*** The case has been very imperfectly reported throughout; but the misdemeanour was undoubtedly receiving a

lunatic without certificate. We have remarked on the general question in our leader columns to-day.—ED. L.

PARLIAMENTARY PROCEEDINGS.

HOUSE OF LORDS.

Friday, July 12th.

VIVISECTION.

Lord TRURO, in presenting a petition against vivisection, which document, he said, was signed by some thousands of persons in the metropolis, took occasion to protest against the constitution of the Royal Commission on Vivisection and the conclusion at which that Commission had arrived. He said that two or three of the scientific members were partisans of vivisection, and other members, including the noble viscount who acted as president of the Commission, were persons who had filled office and the tendency of whose minds was to look at everything from logical and expediency points of view. One of the most eminent witnesses examined by the Commission stated that in the whole course of the practice of vivisection only twenty-one or twenty-two discoveries had resulted from it. Could anyone remember that a single discovery in relation to affections of the nerves had resulted from it? He did not think that the conclusions of the Royal Commission were justified by the facts of the case.

The Earl of KIMBERLEY suggested that notice of such a speech as the noble lord was making would have been more in accordance with the usual practice of their lordships' House.

Lord TRURO had consulted one of the officers of the House on the point, and was told that to make remarks on the subject of vivisection when presenting the petition would not be out of order. He did not want, however, to pursue the topic further.

Viscount CARDWELL had no wish to continue the discussion; but it appeared to him that, whether with notice or without it, the proper opportunity for a speech like that of his noble friend (Lord Truro) was when their lordships had before them the Bill founded on the report of the Royal Commission, which Bill had passed their lordships' House, received the sanction of the other House, and was now law. The House must have heard with surprise the statement of his noble friend with respect to the Royal Commission. He was not responsible for the nomination of the members of the Commission, but he could assert that no partisanship was shown by the scientific members, who, with their fellows on the Commission, manifested the greatest anxiety in the cause of humanity. The reasons for the recommendations of the Commission were on record, and were not disputed when the Bill was before the House. If his noble friend thought them open to dispute, he ought to have availed himself of the opportunity afforded in the discussions on the Bill.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Primary Examination in Anatomy and Physiology at meetings of the Board of Examiners on Monday and Tuesday last:—

Arthur Kess, Madras and University College; William R. Williams, Manchester and St. George's Hospital; John W. Nicholson, Joseph H. Lister, Arthur Edensor, and Alexander Lane, Guy's Hospital; Thomas Rhodes, Herbert Clatworthy, Edwin A. Neatby, Arthur L. Jones, and G. L. Drobnashian, London Hospital; Rickard W. Lloyd, William C. E. Taylor, William Brewster, Walter Reeve, John L. Hendley, Geoffrey Stead, and James Harper, St. Bartholomew's Hospital; Arthur C. N. Goldney, Robert W. Branthwaite, Charles G. Bunn, John C. Culling, John S. E. Cotman, and John H. H. Richardson, Charing-cross Hospital; James W. Papillon, Francis W. E. Hare, and Clement H. Sers, St. Thomas's Hospital; Charles R. Owen, Henry F. White, and Henry Lee, St. George's Hospital; Chas. Tweedy, Andrew W. Dallmeyer, and H. Wilkinson Newsholme, University College; David Collingwood, Liverpool and University College; James S. S. Bridgeford, Sheffield and Charing-cross Hospital.

Of the 118 candidates examined during the last and present weeks, 59 failed to reach the required standard, and were referred for three months' further anatomical and physiological study.—The next Primary Examination will take place in November.

UNIVERSITY OF DURHAM.—The following gentlemen, having undergone the necessary examination, obtained the degree of M.D. during the Easter term:—

Fernie, William Thomas, M.R.C.S., L.S.A.
Milson, Richard Henry, M.R.C.S., L.S.A.
Summerhayes, William, M.R.C.S., L.S.A.

The following gentlemen, having fulfilled the regulations of the University and undergone the necessary examination, were admitted to the degree of M.B.:—

Dixon, James D., M.R.C.S.
Mahony, —, M.R.C.S., L.S.A.
Morton, Shadforth, M.R.C.S.
Price, Henry E., B.Sc., M.R.C.S.
Robinson, A. H., M.R.C.S., L.S.A.
Rygate, B. R., M.R.C.S.

Two candidates (one for each degree) failed to satisfy the Examiners. (The examination for the M.D. degree is for practitioners of fifteen years' standing.)

COLLEGE OF PHYSICIANS IN IRELAND.—At the July examinations the following obtained the licences in Medicine and Midwifery:—

MEDICINE.—Samuel Bagley, Edward Bennett, Henry Foster Burnes, James Davison, John Sneyd Hawkins, Arthur Edward Pownall, Robert Leonard Rutherford, Peter Ryan.

MIDWIFERY.—Samuel Bagley, Edward Bennett, Lewis Buchanan, Henry Foster Burnes, James Davison, Henry Singer Gabbett, John Sneyd Hawkins, James Bostock Jacob, Robert Joseph Martyn, John Gregg O'Neill, Arthur Edward Pownall, Peter Ryan, Robert Norman Thompson, William Cleland Wilkinson.

THE library of the Obstetrical Society will be closed during the month of August.

A CONVALESCENT HOME for males has been opened at Portheawl.

MR. ALEXANDER, surgeon, of Grimston, Norfolk, has been accidentally shot and seriously injured in the foot, while pigeon shooting.

AN address and testimonial have been presented to Dr. Richard Stanistreet, medical officer of Malahide dispensary district.

THE Public Health Committee of the corporation of Dublin, in consequence of there being no means of providing the necessary funds, have ceased all payments for the destruction of infected clothing of small-pox patients.

AT the quarterly meeting of the Directors of the Naval Medical Compassionate Fund, held on the 9th instant, Dr. Thomas Nelson, Inspector-General, in the chair, the sum of £57 was distributed amongst the various claimants.

VACCINATION GRANTS.—The following gentlemen have received the Government grant for successful vaccination in their respective districts:—Mr. Thomas Wilson, Dalston, £11 2*s*. (sixth award); Mr. Richard Lanphier, Alford, £7 14*s*. (second award).

SOUTH LONDON SCHOOL OF PHARMACY.—On Saturday, the 13th July, the presentation of the medals and certificates to the successful candidates at the last school examinations for the session, held between the 4th and 8th July, took place at this institution, when Mr. Baxter, the Secretary, announced the awards as follow:—Senior Chemistry—Medal, Mr. Phillips; certificate, Mr. Stonham. Junior Chemistry—Medal, Mr. Lumley; certificate, Mr. Humfrey. Botany—Medal, Mr. Humfrey; certificate, Mr. Lovely. Materia Medica—Medal, Mr. Powell; certificate, Mr. Humfrey. Pharmacy—Medal, Mr. Lovely; certificate, Mr. Lumley.

MALVERN COLLEGE.—The speech day and annual gathering of this school took place on Wednesday, July 10th. A large assemblage of friends met to hear the speeches and to see the prizes given away by the Bishop of Worcester, visitor of the school. The head master, the Rev. A. Faber, opened the proceedings by recounting the history of the school during the past year and by congratulating the council on the marked success which had attended their efforts. Various changes had taken place, the nature and effect of which he explained; and both the numbers of the school and their success in foreign competitions were a source of pleasure to the authorities. He lamented the approaching departure of one of the best known members of the teaching staff, and concluded a most satisfactory report by requesting the Visitor to present the prizes. A number of dramatic performances and recitations brought the proceedings to a close.

HEALTH OF DUBLIN.—During the June quarter the births registered amounted to 2503, or 31·8 in every 1000 of the population, and the deaths to 2380, or 30·3 per 1000. Zymotic diseases produced 586 deaths, being 201 over the average for the corresponding quarter of the preceding ten years. Measles declined considerably, but the mortality from whooping-cough was much beyond the average. The principal causes of death were as follow:—Bronchitis caused 329 deaths, phthisis 258, small-pox 212, convulsions 138, whooping-cough 112, heart-disease 107, pneumonia 85, fever 81, cancer 51, hydrocephalus 47, paralysis 44, diarrhœa 39; apoplexy 35, croup 27, measles 22, scarlatina 20; whilst 62 deaths resulted from accidents or negligence, 2 were homicidal, and 3 suicidal.

BEQUESTS ETC. TO MEDICAL CHARITIES.—Mr. Jacob Yallowley Powell, of Streatham and Lime-street, bequeathed £1000 each to the London Hospital, St. George's Hospital, and the Royal Free Hospital. Mr. Henry Brown, of Rawdon, Yorkshire, bequeathed £500 each to the Bradford Infirmary and the Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, £250 each to the Bradford Eye and Ear Infirmary and the Bradford Fever Hospital, and £100 to the Ilkley Hospital. Mrs. Cubitt, of Denbies, Dorking, has given £100 to the Brighton Hospital for Sick Children. Miss Robertson, of Elgin, bequeathed £1000 each to the Aberdeen Ophthalmic Institution, the Aberdeen Hospital for Incurables, and the Scottish National Institution for Imbeciles at Larbert, Stirlingshire. The Leeds Royal Infirmary has been presented anonymously with £2316 in Railway Stock. Mr. William Kendall bequeathed £500 to the West of England Eye Infirmary. The Gloucester Infirmary has received £2000 (less duty) under the will of Mr. Charles Walker.

Medical Appointments.

ANDREWS, Mr. W. S., has been appointed House-Surgeon to University College Hospital.

BENNET, C. J., M.R.C.S.E., has been reappointed Medical Officer of Health for the Chapel-en-le-Frith Rural, Hayford Rural, and Fairfield Urban, Sanitary Districts, at £165 per annum for two years.

BYRNE, W. S., M.B., C.M., has been appointed Senior Resident Medical Officer to the Metropolitan Free Hospital, vice Wilkins, resigned on account of ill health.

CASE, H., M.R.C.S.E., L.S.A.L., has been appointed Lecturer on Psychological Medicine at the Middlesex Hospital Medical College, vice Rayner, resigned.

COWAN, J. S., M.D., C.M., has been appointed Certifying Factory Surgeon for Dunbar, vice Dunlop, deceased.

CROLY, T. H., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer, Public Vaccinator, &c., for the Achill Division of the Achill Dispensary District of the Newport Union, co. Mayo, at £100 per annum and fees, vice Hamilton, resigned.

EDGINTON, R. W., M.D., has been appointed an Honorary Physician to the Birmingham and Midland Hospital for Women.

GABB, Mr. J. P. A., has been appointed Physician's Assistant to University College Hospital.

HARVEY, C. A., M.D., has been appointed an Assistant-Physician to the Cork Lying-in Hospital, vice Holmes, promoted.

HAWKES, J., M.D., M.R.C.S.E., has been appointed Medical Officer for the St. Faith's District and the Workhouse of the St. Faith's Union, Norfolk, vice Priestley, resigned.

HIGHET, J., M.B., C.M., L.F.P.S.G., has been appointed Parochial Medical Officer, Public Vaccinator, and Medical Officer of Health for Troon, Ayrshire.

HOLMES, W. H., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed a Physician to the Cork Lying-in Hospital, vice J. R. Harvey, M.D., resigned.

KNIGHTS, J. W., F.C.S., has been appointed Public Analyst for the Borough of Saffron Walden, at £5 5s. per annum for statutory quarterly reports, 21s. for each analysis of water, 10s. 6d. for each analysis of food or drugs, and 21s. and travelling expenses for attending as a witness.

MCDOWELL, F. V., L.R.C.S.I. & L.M., L.A.H.D., has been appointed Medical Officer, Public Vaccinator, &c., for the Baltinglass Dispensary District of the Baltinglass Union, co. Wicklow, at £140 per annum and fees, and £15 per annum as Medical Officer of Health, vice Rawson, deceased.

MCPHERSON, C., M.B., L.R.C.S.Ed., has been appointed Medical Officer and Public Vaccinator for the Parish of Creich, Sutherlandshire, vice Allan.

MOORE, J., L.R.C.P.I., M.R.C.S.E., has been appointed House-Surgeon to the Wolverhampton and Staffordshire Hospital.

POWELL, D., M.D., has been appointed Assistant-Physician to the Middlesex Hospital, vice Evans, resigned.

PRYCE, E. W., M.R.C.S.E., has been appointed Assistant Medical Officer to the Woolwich Union Workhouse and Infirmary, Plumstead, at £75 per annum, board, lodging, &c., vice Richmond, resigned.

ROBINSON, A. H., M.R.C.S.E., has been appointed an Assistant House-Surgeon to the General Infirmary, Hull, vice Wilmot, whose appointment has expired.

ROWE, B. M., M.R.C.S.E., has been appointed House-Surgeon to the District Hospital, West Bromwich.

RUSSELL, W., M.B., C.M., has been appointed House-Physician to the Wolverhampton and Staffordshire Hospital.

THOMSON, W., M.D., C.M., L.M., L.F.P.S.G., L.S.A., has been reappointed Medical Officer of Health for the Peterborough Rural Sanitary District.

TODD, J., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the No. 2 District of the Lunesdale Union, Lancashire, vice Watson, deceased.

TWYNAM, Mr. G. E., has been appointed Ophthalmic Assistant to University College Hospital.

WILLIS, G., M.D., L.R.C.S.Ed., L.S.A.L., has been reappointed Medical Officer of Health for the Monmouth Rural Sanitary District, at £160 for one year.

WILSON, D., M.D., C.M., L.M., has been appointed Medical Officer and Public Vaccinator for the Dilwyn District of the Weobley Union, at £78 per annum and fees, vice Tivy, resigned.

Births, Marriages, and Deaths.

BIRTHS.

DOBBIN.—On the 11th inst., at Banbridge, co. Down, the wife of William Dobbin, M.D., of a daughter.

HARDY.—On the 7th inst., at Sturt Villas, Bournemouth, the wife of William G. Hardy, M.B., C.M., of a son.

HARRIS.—On the 15th inst., at Cold Harbour-lane, the wife of Henry Harris, M.R.C.S.E., of a son.

HEWSON.—On the 11th inst., at Cheadle, Cheshire, the wife of Robert W. Hewson, of a daughter.

HUNT.—On the 4th inst., at Millbrook House, Chagford, Devon, the wife of Albert Dunning Hunt, M.R.C.S.E., of a son.

KERANS.—On the 2nd inst., at Banagher, the wife of Robert Kerans, L.K.Q.C.P.I., of a daughter.

LOVELL.—On the 11th inst., at Wellington-road, St. John's-wood, the wife of Francis Otley Lovell, L.R.C.P.I., of a daughter.

MACLAREN.—On the 8th inst., at Portland-square, Carlisle, the wife of Roderick Maclaren, M.D., of a son.

MARRIAGES.

GARNER—SHARPLES.—On the 11th inst., at the Parish Church, Preston, John Edward Garner, M.B., of Preston, to Annie Elizabeth, elder daughter of George Sharples, of Bank House, Preston.

TATHAM—LATHAM.—On the 10th inst., at All Saints' Church, Wigan, by the Rev. A. E. P. Gray, M.A., Garnett George Tatham, M.D., of St. Helen's, to Mary Elizabeth (Lilian), daughter of Dr. Latham, of Wigan.

DEATHS.

FOWLER.—On the 4th inst., at Easter-Ord, Skene, Aberdeenshire, John S. Fowler, M.D., aged 57.

FRY.—On the 10th inst., at Frimley, Augustin Barber Fry, M.R.C.S.E., aged 55.

GRAY.—On the 12th inst., at Ashley-road, Aberdeen, John Gray, Surgeon, formerly of Dundee, aged 80.

LONGTON.—On the 13th inst., at the Priory, Southport, Eleanor, the beloved wife of Edward John Longton, M.D., and youngest daughter of James Hardy Wrigley, J.P., D.L., of Sandown, Southport, aged 41.

MUNGALL.—On the 12th inst., at Abbotsford-place, Glasgow, Andrew Mungall, L.F.P.S.G., aged 58.

NOON.—On the 14th inst., at Dublin, Frederick Noon, L.F.P.S.G., of Earlestown, Lancashire, aged 58.

O'NEILL.—On the 31st May, at Fort Wellington, Madras, Charles John O'Neill, Surgeon, Army.

PROSSOR.—On the 18th ult., at Tramore, co. Waterford, John H. Prossor, M.R.C.S.E., aged 61.

ROBERTSON.—On the 11th inst., at Sele Grange, Hertford, Montgomery Robertson, M.D., aged 73.

RUDLAND.—On the 14th inst., at Foleshill, Warwickshire, William Goldsmith Rudland, M.R.C.S.E.

SCOBELL.—On the 8th inst., at Ridgway, Plympton, Devon, Thomas Edward Scobell, M.R.C.S.E., aged 32.

SMITH.—On the 14th inst., at St. Helier's, Jersey, Joseph Smith, M.R.C.S.E., formerly of Wadham House, Lozells, Birmingham.

WARD.—On the 8th inst., at Wimbledon, William Ward, M.R.C.S.E., of Horncastle.

WEATHERHEAD.—On the 9th April, at Adelaide, Dr. Robert B. Weatherhead, aged 25.

[N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages and Deaths.*]

BOOKS ETC. RECEIVED.

Dr. B. Bramwell: Cases of Aneurism of the Aorta.
Annual Report of the Municipal Commissioner of Bombay.
C. E. Pascoe: A Practical Handbook to the Principal Professions.
Dr. E. H. Clarke: Visions—a Study of False Sight.
Dr. J. Byrne: Amputations and Excisions of the Cervix Uteri; their Indications and Methods.
James Samuelson: The History of Drink.
Revue des Sciences Médicales. Vol. XII.
Transactions of the American Gynecological Society. Vol. II. 1877.
Luigi Severini: Ricerche sulla Innervazione dei Vasi Sanguigni.
The Popular Science Review. July.
Clinical Work. April.
Brief. Vol. I. 1878.

Notes, Short Comments, and Answers to Correspondents.

ANIMAL VACCINATION.

Dr. Geo. Wyld. — Our correspondent's observations refer only to some of the chances of syphilitic contamination to which vaccine lymph may be exposed, and do not take account of the chances arising from carelessness or misadventure, and which may be designated accidental, to which animal lymph may be subjected as well as humanised lymph. In the letter which we printed last week from Dr. Warlomont, and with which we were favoured by Dr. Weir, one sort of chance of accidental contamination of animal lymph, or inoculation of syphilis, was referred to. A study of the more celebrated instances of vaccino-syphilis will indicate other chances. Dr. Weir properly points out that the chance referred to by Dr. Warlomont is obviated by the use of the charged lancet-shaped ivory-point now becoming the rule in the practice of animal vaccination. We are prepared to believe that the chances of the accidental inoculation of syphilis are less with vaccination by animal lymph than by humanised lymph; but it is premature to speak positively on this point until we have an experience of animal vaccination which can compare somewhat more narrowly than at present with that which we have of ordinary vaccination. At the most the chances of vaccino-syphilis occurring in the practice of vaccination with humanised lymph in this country are so exceedingly small as scarcely to admit of calculation, and the argument for animal vaccination as against vaccination with humanised lymph on this ground is more imaginative than real.

Zoon.—We are not aware that any work of the kind has been published.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—A Royal Warrant has lately been promulgated, regulating forage allowance for officers of the army, defining those officers entitled to forage by virtue of their rank, and stating the number of horses for each rank. The Army Medical Department has been omitted from the list, but is provided for in a paragraph as follows:—Officers of the Army Medical Department (except officers drawing forage by virtue of their rank prior to 1st March, 1873) will be allowed forage for such number of horses as may be necessary for the efficient performance of their public duties. Why this invidious distinction between medical officers and the other officers of the army? Why is it left to the local military authorities to sanction whether a medical officer is or is not to have forage?—a restriction equivalent to a complete prohibition; for medical officers, subjected as they are to constant moves, are not likely to invest in horses, incurring the expense of transit from station to station on a mere chance of drawing forage. By this late Warrant, the rights of over 500 medical officers now on full pay, who entered the army before March, 1873, under the same Warrant as their more fortunate brethren promoted before that date, are set at nought, though the Warrant which induced them to enter the service distinctly guaranteed to them forage on promotion to surgeon-major, with what faith kept we now see. Surely it is not to be wondered at that discontent reigns supreme in the department, and its unpopularity has been reflected to the various medical schools. The violation of Warrants by which medical men have been induced to enter the service, together with the general principle adopted in the army of ignoring and superseding on all occasions the Medical Department, are the principal causes of discontent, and not

June 20th, 1878. UNIFICATION.

*** Our correspondent will see that we anticipated him in last week's LANCET.—ED. L.

PANCREATIC FERMENTS.

M. DEFRESNE proposes the following names for the pancreatic ferments: "Amylopsine" for that ferment which converts starch into sugar, "steapsine" for that one which effects the decomposition of fat, and "myopsine" for that which dissolves the albuminous compounds.

Constant Reader.—The proponsity to drunkenness is often hereditary. But a child of drunken parents would be very likely to grow up sober if removed from all associations with intemperance, and otherwise well educated.

Mr. R. Roxburgh's paper shall appear in an early number.

UNIVERSITY OF ST. ANDREWS AND DUNDEE INFIRMARY.

To the Editor of THE LANCET.

SIR,—A year or two since you originated the idea of affiliating the University of St. Andrews to Dundee Infirmary. Pray give the now quiescent ball another roll. The places indicated lie only a few miles apart, nothing like so far as Durham from Newcastle. In conjunction with many other St. Andrews' men, who have, I trust, left some little mark in the world, I hope to see my *alma mater* emerge into broad daylight once more. Why should it be confined to its ten graduates annually? A friend, a thoroughly competent man, who has lately graduated at St. Andrews, tells me there is no chance of a man getting his name put down upon the list of candidates unless he obtains testimonials from the heads of the profession; also, that more than ten men are sent for, and the *best* ten passed. I can assure you that when I graduated in 1860 the examination was thorough and searching.

Your obedient servant,

July 12th, 1878. A HOSPITAL PHYSICIAN.

FOREIGN DEGREES AND THE BILL.

Iota.—The Bill gives power to the Council to judge whether any foreign degree gives the right of practice in the country where it was obtained, and represents an amount of knowledge equal to that required for practising in this country. A person of good character holding such a degree, not being a British subject, or who has practised medicine or surgery, or a branch of medicine or surgery, for more than ten years elsewhere than in the United Kingdom, or in the case of persons practising in the United Kingdom for not less than ten years, at the time of the passing of the Act, will be, upon payment of the registration fee, entitled to be registered as a Foreign Practitioner in the Medical Register. It is not illegal at present, at any rate for registered persons, to use the titles attaching to the degrees mentioned by our correspondent.

M.R.C.P.E.—The list will be found in our present number.

SANITARY ADMINISTRATION.

To the Editor of THE LANCET.

SIR,—May I be allowed to ask for answers to the following questions:—

1. Can much be said for the sanitary arrangements of a parish when, after the removal of a small-pox patient, during the disinfection of his room, an open fireplace is sometimes left entirely uncloued, sometimes the windows and doors are not papered round, sometimes the ceilings, paper, and paint left exactly as they were before the patient's removal?

2. Who ought to be held responsible for seeing that the process of disinfection is properly carried out, and who ought to be blamed if it be not so done?

3. Might not improper disinfection be a very potent cause in spreading and protracting an epidemic?

4. Is it anybody's duty to give a certificate of efficient disinfection? If so, whose? The difficulty of procuring such a certificate has, I know, kept a poor man out of his work for weeks. No master would employ a man so long as he had the least suspicion that he was coming daily from an infected habitation.

5. Allowing, as everyone must, the necessity of having small-pox hospitals, providing it can be shown that all the air emanating from such hospitals may, by proper arrangements, be passed through a furnace, and thus effectually disinfected before being poured into the adjacent neighbourhood,—is it not incumbent on the managers to adopt some such arrangement?

Answers to the above most important questions will much oblige,

Your obedient servant,

Fulham-road, July 8th, 1878. ALFRED GODRICH.

*** 1. The official memorandum of the Local Government Board on disinfection directs that when chlorine gas, nitrous acid gas, or sulphurous acid gas is used for the disinfection of a room, the process should endure several hours, and that "all doors, chimneys, and windows" should be "kept carefully closed." Lime-washing ceilings and renewing paint and paper may, under certain circumstances, be very proper additional precautions; but a local authority can scarcely be expected to carry them out, unless its medical officer of health sees special reason for their adoption.—2. Usually the inspector of nuisances is required to see such processes of disinfection carried out as may be directed by the medical officer of health; but the local authority is responsible for making the proper arrangements.—3. "Improper disinfection" cannot well be described as a "potent cause" of disseminating and protracting an epidemic, except by a misuse of terms.—4. We believe that no one is legally bound to give a certificate of efficient disinfection; but there certainly should be no difficulty in obtaining one when necessary from the private medical practitioner, or the officials of the local authority directing such disinfection.—5. We are unaware of any evidence whatever of small-pox being disseminated from small-pox hospitals by the air "emanating from them." The very extensive experience of these hospitals in this country during the last seven years appears to us to be quite conclusive upon this question. Properly arranged and managed, small-pox hospitals may practically be placed anywhere without danger to the surrounding population, and no precaution as to the air of these hospitals, such as that suggested by our correspondent, is called for.—ED. L.

Pk. D.—1. It will be legal to use it then as now.—2. Yes; such is the meaning of that clause in the Bill, which forbids a person wilfully taking or using the designation of any medical diploma which he does not possess.

Henry S. King and Co.—The papers will be inserted before the end of the ensuing month.

FISH IN HOT WEATHER.

To the Editor of THE LANCET.

SIR,—Surely the present method of deluging fish with water, even though cold, must make it more liable to decay, especially as, after being bought, it is kept, as a rule, in a hot kitchen or pantry. Besides, could not some simple arrangement be adopted by which the cold of the ice might preserve the fish without the moisture being brought into contact with it, and yet so that the fish could be seen by the possible purchasers? A dead fish, like any other animal body, will absorb moisture, which it would not when alive. Even if fish is a little dried, its plumpness is easily restored by putting it in some salt-water for a short time, without injury to its flavour. All good cooks know that most fish is damaged even if "it looks at water" before it is cooked.

Your obedient servant,

London, July 13th, 1878. W. H. T. P.

Resident Surgeon.—It would be within the powers of a resident hospital surgeon to decline attendance at an inquest held outside the hospital, on the ground that he could not be spared from his duty. The representation would probably be followed by a summons as medical witness, in which case there would exist a legal claim to a fee for attendance, which claim must be insisted on before the witness is sworn. No post-mortem examination should be made without a written order from the coroner, when this also would form the ground of a claim. The advantage taken of the technical fact that the patient died in a hospital when the inquest is held outside the building is unfair, and should be opposed.

Surgeon-Major Smith's paper shall, if possible, be inserted next week.

VOLUNTEER AMBULANCE DEPARTMENT.

To the Editor of THE LANCET.

SIR,—As treasurer of the above department, it may not be out of place if I explain through your columns the purpose for which we appeal for funds, particularly as in the concluding paragraph of your remarks last week you say with reference to this subject that "money will be more readily provided if some definite idea were given of the objects for which it will be required."

The object, as our circular points out, is to train two men per company throughout the volunteer force to act as stretcher-bearers, whose duties will be to apply primary dressings, and remove the wounded from the battle field to the ambulances of the first line. To attain so desirable a result, it is necessary that the Government help hitherto accorded to a movement, which even in time of peace is necessary and useful, should be supplemented by contributions from the public, so as to enable the department to carry on its work. Already two classes, numbering together about 300, have been trained in stretcher-drill, ambulance work, the application of splints and tourniquets, and are qualified either on the march or elsewhere to give intelligent and trained assistance to their regimental surgeons.

To continue our work efficiently, we desire to purchase one or two ambulances, stretchers, surgical appliances, &c., and we require means to pay for the services of our secretary, rent of head-quarters, printing, and other incidental expenses.

The instruction of the third class (to which I have the honour of being instructor), numbering over 100 men, members of different metropolitan corps, is approaching its termination, and will be officially inspected on Friday, the 19th inst., at 7.30 P.M., by Surgeon-General Munro, C.B., A.M.D., at Albany-street Barracks, Regent's-park. The Committee will be glad to see any members of your staff on this occasion.

I cannot refrain from remarking with regret that you appear to charge the Committee with endeavouring to obtain men by delusive statements. This is far from our desire. What we intended to convey by means of our circular was that the men who are instructed to act as stick-bearers fulfil all the duties incumbent upon soldiers until called upon to attend to the wounded.

I trust that you will aid us by the advocacy of your valuable journal in furthering this movement wherever the volunteer force exists.

A fourth class is in formation, and will commence to receive instruction early in September. All particulars may be obtained by writing to the Secretary, Mr. Taynton, Head-quarters, Volunteer Ambulance Department, 8, Northumberland-street, Strand.

In the meantime I shall be pleased to acknowledge any donations or subscriptions in aid of the department.—Yours truly,

WILLIAM H. PLATT,
Surgeon, T.H.R. Brigade, Treasurer.

4, Upton-villas, Kilburn, July 10th, 1878.

Mr. Horwood Casson.—Garrod's Materia Medica; Oliver's or Bentley's Botany; Taylor's or Guy's Medical Jurisprudence; Leishman's or Playfair's Midwifery.

Mr. W. N. Thursfield.—The communication referred to has not come to hand.

FOREIGN AND COLONIAL DEGREES.

To the Editor of THE LANCET.

SIR,—When you were referring to my communication on the subject of the registration of foreign and colonial degrees, I should have been glad could you have found space for the letter itself. I entirely agree with you that "we cannot refuse to recognise good diplomas from our own colonies," and that "the time has fully come for recognising good foreign diplomas in a spirit of scientific and international generosity"; but I think I give utterance to the feeling of the majority of the profession in objecting to the holders of these colonial and foreign diplomas being placed in a better position than the students of our British schools.

It will not be pretended that the degrees of these extra-territorial Universities (for I believe that medical corporations do not exist out of the British Isles) are of greater value or more difficult of attainment than those of the Universities of the United Kingdom, and yet their possessors are to be admitted to the Register without further examination; while our own undergraduates must pass through a *double* test before they can obtain their diplomas or degrees, and be registered as medical practitioners.

"Very serious responsibility," indeed, to use the words of your annotation, will devolve on the members of the Medical Council in the matter of the recognition of these foreign and colonial degrees, and I venture to prophesy that they will find the task anything but an enviable one, more especially as they are likely to have a numerous list of applicants.

I am intimately acquainted with one of the most flourishing of our colonies, where the local law is much the same as that now proposed for the United Kingdom, the Colonial Medical Board being empowered to register qualifications granted in any country, provided it is satisfied with the character of the applicant, and that his diploma would enable him to practise in the country where he obtained it. That law has been so widely interpreted that the Medical Board has found it almost impossible to refuse to register any qualification, and the very threat of an application for a *mandamus* to the Supreme Court has made it (the Board) place a name on the Register that had previously been refused. The proposed British law is somewhat more stringent, and we may expect more independence from the General Medical Council, but its members have an unpleasant and invidious task before them.

It may not be wise or politic to insist that foreign and colonial graduates should submit to an examination by the Conjoint Board before their names are placed on the Register; but I most respectfully submit that, in bare justice to the men of our own schools, their competitors from abroad should, *in lieu of the second examination*, be required to have passed a period of probation as practitioners in their respective countries of some three or five years at least.

I am, Sir, your obedient servant,

July 13th, 1878. AN OLD COLONIAL PRACTITIONER.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ANATOMICAL EXAMINATIONS.

THE following were the questions on Anatomy and Physiology which were submitted to the candidates at the Primary Examination for the diploma of Member of the College on the 5th inst., when they were required to answer at least four, including one of the first two, out of the six questions:—

1. Define what is meant by blood-pressure, and state the chief causes of its variation.
2. Describe the structure of the different transparent media of the eye, and the part they play in the physiology of vision.
3. Describe the intrinsic and extrinsic muscles of the tongue.
4. Describe in order from above downwards the several structures which are brought into view when the sternum and costal cartilages have been removed, the anterior mediastinum cleaned, and the pericardium laid open.
5. Trace the facial artery from its origin to its termination, and give the distribution and relation of its branches.
6. Give the dissection required to expose the trunk and branches of the small sciatic nerve.

Mr. J. V. Solomon.—We shall be glad to receive the paper. The name was, we need scarcely say, omitted inadvertently.

Rus.—There are three works which discuss the subject: Barnes, Hewitt, and Thomas.

ABERYSTWITH WATER-SUPPLY.

To the Editor of THE LANCET.

SIR,—Year after year has the impurity of the water been a drawback to the popularity of Aberystwith as a watering-place, but at last the time has arrived that the enemies of Aberystwith will no longer have the water question as a subject for their scandalising propensities; and as a letter appeared a year or two ago in your columns, painting as black as possible the Aberystwith water-supply, I trust you will consider me justified in requesting of you the favour of publishing the following report on our present water-supply, and oblige,

Yours truly,
T. D. HARRIES, F.R.C.S. Eng.

1878.—The Aberystwith Water-supply: Analytical Report by Professor Attfield, F.C.S.

London, 17, Bloomsbury-square, W.C., June 24th, 1878.

SIR,—The sample now analysed is a pure soft water, of excellent quality for all drinking purposes and for general household use—at least it is primarily of this high quality; but it has, unfortunately, become contaminated by a trace, a mere trace, of lead. Waters of this high degree of purity do generally attack lead; hence, although in this particular sample the quantity of lead is so minute as to be harmless, it is advisable to avoid the use of pipes, cisterns, &c., made of lead for the delivery or storage of such water. JOHN ATTFIELD, Ph.D.

P.S.—The analytical data are appended. This sample was delivered through a lead pipe of about sixty feet length from the public main.

Analysis of Water supplied to Aberystwith.

One gallon contains the following number of grains and decimal parts of a grain of the respective substances:—

Total solid matter, dried at 212° F.	5·6, or 5¼
Ammoniacal matter, yielding 10 per cent. of nitrogen	0·02
Albuminoid organic matter, yielding 10 per cent. of nitrogen	0·02
Nitrites	None
Nitrates, containing 17 per cent. of nitrogen	0·35
Chlorides, containing 60 per cent. of chlorine	1·8
Hardness removed on boiling the water	0
Unaffected by ebullition	3·5
Total hardness	2¼
Lead	A faint trace.

(Signed) JOHN ATTFIELD, Ph.D.

P.S.—Since receiving the above report, I have had an analysis of the water made as delivered from the reservoir, without having passed through the leaden pipes, and there was not a trace of lead to be found. Therefore I think we may safely conclude that Aberystwith is at present supplied with one of the finest waters in the kingdom.

Aberystwith, July 7th, 1878. T. D. HARRIES, F.R.C.S. Eng.

THE LATE QUEEN OF SPAIN.

To the Editor of THE LANCET.

SIR,—I have been waiting anxiously, hoping that some notice would be taken of the lamented death of the young Queen. The information that we have been able to glean from the daily papers respecting the illness has been vague and unsatisfactory to a degree. On first perusing the announcement of the illness, it struck me that it was by no means impossible that it might be a miscarriage, with partial separation and retention of the ovum, causing febrile disturbance. The report that the hæmorrhage was from the bowel may, after all, rest upon no more certain foundation than some old nurse's statement, who might wish to conceal the fact of the hæmorrhage being vaginal from motives of delicacy.

It would be of great interest to the profession, I feel sure, to learn further details of this distressing case. Yours &c.,

July, 1878. OBSTETRICUS.

UNUSUALLY EARLY MENSTRUATION.

To the Editor of THE LANCET.

SIR,—The following case may be of interest to some of the readers of your journal.

Ada N——, a comparatively strong and healthy child, aged five and a half years, the daughter of respectable parents, was brought under my notice in the beginning of the present month. Below is the history I obtained from the mother:—Twelve months ago, having just returned from a seaside trip, she was much alarmed to find that the child's underlinen &c. was stained with blood, and, upon further examination, found that it had passed from the vagina. She mentioned this to some of her female friends; but, as the child did not seem to suffer in any way, they determined not to take any further notice of it. Since then the child has been unwell regularly every month, with only two exceptions, and on these occasions she suffered from epistaxis. The discharge lasts three days, and the amount is generally about two ounces. She does not experience any pain either before or during the periods, nor does she seem to have the symptoms usually observed at those times.

The girl's contour is in proportion with her age. There is nothing special about the family history.

On reference to Dr. Tilt's work on Uterine and Ovarian Inflammation, I find one case reported by Brierre de Boismont to have occurred in Paris between the age of five and six, and another between the sixth and seventh year in the same city by the same authority; between the eighth and ninth year there have been several reported. This being the earliest case I find recorded must be my excuse for bringing it before you.

Yours obediently,

Keighley, July 15th, 1878. F. HARRISON TETLEY.

*** Our correspondent will find a still more extraordinary case of the kind, reported by Dr. Horatio Yates, in THE LANCET of May 25th of the present year.—ED. L.

THE TEMPERATURE OF THE HUMAN BODY IN HOT CLIMATES.

To the Editor of THE LANCET.

SIR,—I see in a late number of your journal some discussion on the above subject. Dr. Boileau has said, in THE LANCET before me (May 4th, 1878), to have stated that axillary temperature in the tropics is always *lower* than in England. From an experience of some hundreds, I might perhaps say thousands, of temperatures taken for me and by me in the Madras General Hospital, I may perhaps be allowed to affirm that the normal temperature in this part of India is 98·4° in the axilla of both Europeans and natives. The hands of natives are generally very clammy and frog-like to the touch, and I have often found the thermometer descend to 97° in such hands.—Yours obediently,

M. C. FURNELL, M.D.,
Physician, Madras General Hospital, and Professor of Medicine.

COMMUNICATIONS, LETTERS, &c., have been received from — Dr. Pavy, London; Dr. Tilbury Fox, London; Mr. Lawson Tait, Birmingham; Dr. O. Will, Aberdeen; Mr. Jones, Dwyran; Mr. Tatham, Salford; Dr. Barfoot, Birkenhead; Mr. R. Davy, London; Mr. Webster, London; Surgeon-Major Venour, Meerut; Dr. Pullin, Sidmouth; Messrs. Griffin and Son, London; Mr. Farrar, Morecambe; Mr. Laffan, Cashel; Dr. Hunter, Demerara; Mr. Thomson, Peterborough; Mr. Roxburgh, Weston-super-Mare; Mr. Williams, Festiniog; Mr. G. Lowther, Hull; Mr. Habgood, Eastbourne; Mr. Philip, Mavisbank; Dr. Furnell, Madras; Mr. Deakin, Allahabad; Mr. Ferguson; Mr. Gore, Bath; Mr. Broom; Messrs. Edge and Co.; Messrs. King and Co.; Dr. Tetley, Keighley; Mr. Casson, Highworth; Mr. Meredith, West Bromwich; Mr. Jelf, Birmingham; Mr. Blyth; Mr. Laver, Colchester; Mr. Beck, Taunton; Mr Bentham, Chester; Dr. Taylor; Mr. Bennison, St. Ives; Dr. Cornfield; Mr. Wilton, Bala; Mr. Browne; Mr. Coyer, Okehampton; Mr. White, Carlisle; Dr. Bogg, St. Leonards; Dr. Dobson, Netley; Mr. Howard; Mr. Morton, Leicester; Mr. Grant, Canterbury; Dr. Potter; Dr. Thornley, Newry; Dr. Sawyer, Birmingham; Dr. Jenkins, Longnor; Dr. Reckitt, Newark; Mr. Lewes, Devonport; Mr. Baxter; Mr. S. Smith, Bristol; Dr. Armstrong, Newcastle-on-Tyne; Mr. Simpson, Dursley; Mr. Davison; Mr. Beatton; Mr. Ball; Mr. Ayres; Mr. Wilson, Reading; Mr. Taylor; Mr. H. Warren, Diss; Mr. Curtis; Mr. Sharpe; Messrs Corbyn, Stacey, and Co.; Alpha, Lincoln; A Hospital Physician; Iota; W. H. T. P.; A Licensed One; An Old Colonial Practitioner; Unification; Surgeon, I.M.D.; S. B. S.; Constant Reader; T. B.; Beaufort; M. J.; Obstetricus; Medicus, Paris; Student; G. S.; A. B., Tottenham; M.D., Spalding; F. B.; A. B., Llanfyllin; M.R.C.P.E.; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Maw, Bradford; Mr. Hewson, Cheadle; Mr. Martin, Derby; Mr. Jenkins, Salford; Mr. Woodward, Rugeley; Mr. Davies, Bryngolwg; Mr. Fox, Chorlton; Mr. Geddes, Accrington; Mr. Whiteley, Leeds; Mr. Goyder, Bradford; Dr. Hannan, Avonside; Dr. Goodson, Stratford; Dr. Scott; Mr. Wheeler; Mr. Manby; Mr. Sampson; Dr. Short; Mr. Flinn; Mr. Kempthorne, Callington; Mr. Low; Mr. Jenkinson; Dr. Foster, Jamaica; Dr. Thomson; S. L., Aberdeen; B., Bradford; M.D.; J. D., Bristol; N. J.; C. P.; P. T.; Medicus, Walton-on-the-Naze; A. B., Brighton; Medicus, Wellington; C. L. H.; R. W.; Medicus, Leicester; H. G.; J. T. M.; B. A., Oxford; M.D., Malton; M.R.C.S., Hulme; A. F., Leighton; J. H., Leicester; Alpha, Ryde; Medicus, Redditch.

Guy's Hospital Gazette, Echo, Sheffield Evening Star, British Architect, Essex Standard, Sheffield Independent, Design and Work, Leicester Daily Post, West London Express, Graham's Town Journal, Hampshire Telegraph, &c., have been received.

METEOROLOGICAL READINGS.

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, JULY 18TH, 1878.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Wet Bulb	Dry Bulb	Solar Radiation in Vacuo	Max. Temp. Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
July 12	29·87	W.	57	62	94	69	56	..	Cloudy
,, 13	29·92	E.	56	62	109	74	56	..	Fine
,, 14	30·09	W.	59	67	101	71	55	..	Cloudy
,, 15	30·18	W.	58	63	103	72	57	..	Cloudy
,, 16	30·27	W.	59	64	103	77	55	..	Overcast
,, 17	30·30	W.	63	69	112	85	60	..	Fine
,, 18	30·31	N.	65	73	114	82	63	..	Fine

Medical Diary for the ensuing Week.

Monday, July 22.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

Tuesday, July 23.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.

Wednesday, July 24.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL.—Operations, 1 P.M., and on Saturday at 1 P.M.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations 2½ P.M.

Thursday, July 25.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.

Friday, July 26.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
QUEKETT MICROSCOPICAL CLUB.—8 P.M. Annual Meeting.

Saturday, July 27.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

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